

The Chemical Age

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NOTICES:—All communications relating to editorial matter should be addressed to the Editor, who will be pleased to consider articles or contributions dealing with modern chemical developments or suggestions bearing upon the advancement of the chemical industry in this country. Communications relating to advertisements or general matters should be addressed to the Manager.

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CHRISTMAS HOLIDAYS.

The Offices of THE CHEMICAL AGE will be closed for the Christmas Holidays from 6 p.m. on Friday, December 23, to 9 a.m. on Wednesday, December 28.

A Christmas Greeting

It is possible this year to offer to our readers, without any sense of unreality, the familiar greeting of a Merry Christmas and a Happy New Year. For the prospects before them are better to-day than for a long time past, and people may look with confidence to the New Year for improving business at home and overseas. On every side a desire is springing up for peace and goodwill in industry, and for a co-operative effort to pull the business of the country round. It is pleasant to feel that the initiative in this matter has come very largely from the chemical industry, and that Imperial Chemical Industries, Ltd., has set, not only to chemical firms but to firms of every class, an excellent example in the Labour policy recently announced. Sir Alfred Mond has become the recognised spokesman of this new co-operative policy, and no one could put it forward with greater clearness or authority. A period of stability is what business

requires more than anything else, and with this becoming more and more assured our readers may be justified in enjoying a Merry Christmas, with the hope of a more prosperous New Year to follow than they have enjoyed for some time.

Our Annual Review Number: The Biggest Yet Issued

THE Annual Review Number of THE CHEMICAL AGE, to be issued next week on the last day of the year, will be the largest single issue of this journal yet published. It will consist of about 120 pages, with coloured cover, and will contain a series of reviews of chemical, dye-stuffs, metallurgical and allied developments during 1927, written by recognised authorities. For eight years now these Annual Review Numbers have been issued, constituting a convenient analysis and history of the chief events in British chemical industry during each year, and being filed for reference, not only in this country, but in numerous laboratories, works and libraries in the United States, the British Colonies and other overseas countries. THE CHEMICAL AGE was the first chemical journal to introduce this feature, and though the idea has been imitated our Annual Review Number remains the most complete publication of its kind.

It is particularly gratifying to note that among the contributors to next week's issue are some who wrote for the first of the series, when THE CHEMICAL AGE was only a few months old, and who have regularly written for each succeeding number. The contents will include the following articles:—"British chemical industry in 1927," by Sir William Alexander, M.P.; "Recent Progress in Metallurgy," by Sir Robert Hadfield; "Developments at Billingham in 1927," by Lieut.-Colonel G. P. Pollitt; "The dyestuffs situation: from the user's point of view," by Mr. H. Sutcliffe Smith; "The nitrogen industry in 1927," by Dr. E. B. Maxted; "Chemical engineering developments in 1927," by Mr. S. J. Tungay; "A review of the heavy chemical industry in 1927," by Mr. P. Parrish; "Fine Chemical Progress in 1927," by Mr. C. A. Hill; "The progress of the British dyestuffs industry," by Mr. H. J. Hooley; "Recent developments in chemical fertilisers," by Mr. A. B. Bruce; "Chemical inventions of the year," by our Patents Correspondent; and a review of the activities of British chemical manufacturers. In addition to these special articles, there will be the usual detailed reviews of the work of the various chemical and allied societies. There will be a heavy demand for this issue, and those who are not regular subscribers are advised to order their copies early.

A Franco-German Agreement

THIS week another bunch of reports comes from Berlin relating to German chemical activities. The first item, and the most important, is a dyestuffs agreement said to have been entered into between the I.G. Farbenindustrie and French chemical interests. Both parties, it is stated, have agreed to divide among themselves the production and sale of dyestuffs on the most economic basis, without surrendering their own independence or contemplating combined competition against other countries. These understandings between nations bitterly opposed to each other in the past are certainly to be welcomed, but they supply no ground for suggesting similar agreements with this country. Indeed, the British dyestuffs industry is probably to-day doing quite as well as the German. The reported interview between Sir Alfred Mond and a correspondent of the *Berliner Tageblatt* adds really very little to what is generally known.

The second matter of interest is the decision of the I.G. to spend the proceeds of an issue of 250 million marks on the extension of its plant, mainly at the well-known Leuna works. In Germany, as in England, the synthetic nitrogen industry is extending at an amazing rate, and the new German figures recall the warning uttered recently by the British Sulphate of Ammonia Federation as to a permanent lowering of the price factor. There appears, however, to be almost unlimited faith in the possibilities of the chemical fertiliser industry, and the forms in which chemical plant food is being prepared are undergoing constant improvement.

Atomic Energy

It was Mr. Sidney Webb, if our memory is correct, who, when President of the Board of Trade, astonished a chemical deputation that waited upon him by delivering a sort of counter address, in which he spoke of the possibility of liberating atomic energy for industrial purposes. Sir Ernest Rutherford has, we regret to note, been pouring cold water on these expectations in an address which he delivered in Manchester. The exploding of atoms he described as not a simple matter; only two were known to disrupt themselves, and the exploding of others by shooting alpha particles at them was a form of scientific sport he did not recommend. "So I think," he is reported to have said, rather drily, "we have got to rely on coal and its derivatives for the next few hundreds of years." The same rather cautious attitude will probably be wise in connection with Mr. Frank Hodges's predictions about the great results to accrue from the conversion of coal into oil and similar processes. Mr. Hodges has a real knowledge of the coal industry, but it would be unwise to attach too much importance to his prophecies of a reformed world as the early result of the valuable work now being done in coal research.

Books Received

- HUTTE TASCHENBUCH FÜR DEN PRAKTISCHEN CHEMIKER. Berlin: Wilhelm Ernst and Sohn. Pp. 898. 31 Rmk.
ANNUAL SURVEY OF AMERICAN CHEMISTRY. Vol. II. Edited by Clarence J. West. London: The Chemical Catalog Co. Inc. Pp. 415. \$3.00.
POZZOLANAS. Department of Scientific and Industrial Research, Building Research Bulletin No. 2. London: H.M. Stationery Office. Pp. 10. 3d.

The Calendar

1928		
Jan.		
2	Institution of the Rubber Industry (London Section): "Synthetic Resins." A. A. Drummond.	Engineers' Club, Coventry Street, London.
5	Society of Dyers and Colourists (West Riding Section): "Some Causes of Uneven Dyeing." H. R. Hirst.	Midland Hotel, Bradford.
6	Society of Chemical Industry (Manchester Section): "The Action of Caustic Alkali on Partially Methylated Cellulose—The Heat of Reaction and Absorption." F. C. Wood and A. C. Alexander.	Manchester.
9	Institute of Metals (Scottish Section): Open Discussion. 7.30 p.m.	39, Elmbank Crescent, Glasgow.
9	Institute of Chemistry (Manchester Section): "Some Inter-relations of Chemistry and Physiology." Professor H. S. Raper.	Royal Exchange Buildings, St. Ann's Square, Manchester.
10	Institute of Metals (N.E. Coast Section): "Permanent Mould Casting in Aluminium Alloys." 7.30 p.m.	Armstrong College, Newcastle-on-Tyne.
10	Physical Society and Optical Society: Eighteenth Annual Exhibition.	Imperial College of Science and Technology, South Kensington.
11	Ceramic Society: "Dust Inhalation with special reference to Silicosis." Professor E. L. Collie.	North Staffordshire Technical College, Stoke-on-Trent.
12	Institute of Metals (London Section): "Segregation in Metals and Alloys." Dr. S. W. Smith. 7.30 p.m.	83, Pall Mall, London, S.W.1.
12	Oil and Colour Chemists' Association: "Some Points in the Manufacture of Zinc Oxide." R. G. Daniels.	8, St. Martin's Place, Trafalgar Square, London.
12	Society of Dyers and Colourists (Midlands Section): "Action of Acids on Wool." S. R. Trotman and Dr. E. R. Trotman. 7.30 p.m.	University College, Nottingham.
16	University of Birmingham Chemical Society: Presidential Address by Professor W. N. Haworth.	University, Birmingham.
17	Society of Chemical Industry (Glasgow Section): "The Fuel Problem." Dr. C. H. Lander. 7 p.m.	39, Elmbank Crescent, Glasgow.
18	Society of Glass Technology: 2.30 p.m.	Manchester.
18	Institute of Metals (Swansea Section): "Some Interesting Properties of Alloys of Nickel." W. T. Griffiths. 7 p.m.	Thomas Café, High Street, Swansea.
19	Optical Society: Ordinary Meeting. 7.30 p.m.	Imperial College of Science and Technology, South Kensington, London.
19	Chemical Society: 8 p.m.	Burlington House, Piccadilly, London.
19	Institute of Chemistry and Society of Chemical Industry (Edinburgh Sections): Discussion on "The Separation of Solids and Fluids." 7.30 p.m.	North British Station Hotel, Edinburgh.
19	Institute of Metals (Birmingham Section): "Heat Resisting Alloys." T. H. Turner. 7 p.m.	Engineers' Club, Waterloo Street, Birmingham.
20	Society of Dyers and Colourists (Scottish Section): Dr. H. Levinstein.	Glasgow.
20	Society of Chemical Industry (Liverpool Section): "The Production and Refining of Cane Sugar." Geoffrey Fairrie. 6 p.m.	University, Liverpool.
20	West Cumberland Society of Chemists and Engineers: "The Lubrication of the Automobile." O. T. Jones. 7 p.m.	Workington.
20	Society of Dyers and Colourists (West Riding Section): Annual Dance.	Queen's Hall, Bradford.
20	Society of Dyers and Colourists (Manchester Section). Joint Meeting with the Manchester Section of the Oil and Colour Chemists' Association: "Azoic and Other Insoluble Colours." Dr. A. E. Everest and J. A. Wallcock.	Milton Hall, Deansgate, Manchester.

Jubilee Celebrations of the Institute of Chemistry

Three Distinguished Gatherings in London

A large number of guests, including many scientists of great eminence, attended at the conversazione and dinner held in London, on December 14 and 15 respectively, to celebrate the jubilee of the Institute of Chemistry. In addition, the Salters' Company gave a luncheon to members of the Institute and others, at the Salters' Hall, London, on December 14.

THE following bodies participated in the celebrations: The Chemical Society, the Society of Chemical Industry, the Society of Public Analysts, the Institution of Chemical Engineers, the Bio-Chemical Society, the Society of Dyers and Colourists, the British Association of Chemists, the Oil and Colour Chemists' Association, the International Society of Leather Trades' Chemists (British Section), and the Chemical Industry Club.

On the evening of Wednesday, December 14, a reception was held by Professor and Mrs. Smithells and the council of the Institute at the Wharnclyffe Rooms, Hotel Great Central, Marylebone. A very large number of guests attended. During the reception a programme of music was played, and afterwards a dance took place. The guests were supplied with an illustrated programme, containing sketches of the past presidents.

The Salters' Company Luncheon

On Thursday, December 15, the Salters' Company, in honour of the jubilee of the Institute, entertained a large number of guests to luncheon. The Master of the Company, the Rev. T. Basil Woodd, in offering greetings to the Institute, pointed out that the Company, which was five or six hundred years old, had been connected with the sale of soda, potash, sulphur, cochineal, etc. This linked them with chemistry, and a further link between them and the Institute was that one of the foremost of the Company's aims was the advancement of education. He referred in this connection to the work of the Salters' Institute of Industrial Chemistry, which was directed by the president of the Institute of Chemistry, Professor Arthur Smithells, and described the manner in which the Salters' Institute assisted in the training of chemists.

Professor Arthur Smithells, in reply, said that his connection with the Salters' Company and the Institute of Chemistry made him, at that luncheon, not only a guest but a host. He therefore delegated the duty of replying on behalf of the Institute of Chemistry to Mr. E. R. Bolton, the senior vice-president. The latter, in thanking the Salters' Company for their generous hospitality, emphasised the fact that the Salters' Institute of Industrial Chemistry and the Institute of Chemistry both laid stress on the great importance of a practical training in chemistry. Dr. H. E. Armstrong also spoke.

The Institute of Chemistry held its jubilee banquet at the Wharnclyffe Rooms, Hotel Great Central, London, on Thursday, December 15, when Professor Arthur Smithells (president) presided over 550 members and guests on behalf of the Institute. Among those present were Sir Alfred Mond; Sir Ernest Rutherford (president of the Royal Society); the Hon. Sir Charles A. Parsons, F.R.S.; Prof. J. Millar Thomson, F.R.S. (past president); Professor H. B. Baker, F.R.S. (president of the Chemical Society); Colonel Sir Edward Brotherton; Lieut.-Gen. Sir Webb Gillman, D.S.O. (Master-General of Ordnance); Sir Robert Robertson, F.R.S. (Government Chemist); Mr. F. H. Carr (president of the Society of Chemical Industry); Professor H. E. Armstrong; Mr. Robert Mond; Professor E. C. C. Baly (British Association for the Advancement of Science); Sir Richard A. Gregory (British Science Guild); Mr. H. T. Tizard, F.R.S. (Department of Scientific and Industrial Research); Mr. E. R. Bolton (president, Society of Public Analysts); Dr. Herbert Levinstein (president, Society of Dyers and Colourists); Sir Hugh Bell; Sir William Waters Butler (president, Institute of Brewing); Sir Arthur Keith (president, British Association for the Advancement of Science); Sir Herbert Jackson, F.R.S.; Mr. A. Chaston Chapman, F.R.S.; Sir Dugald Clerk, F.R.S.; Sir Brodie H. Henderson (Institution of Civil Engineers); Professor Sir William J. Pope, F.R.S.; Professor G. G. Henderson, F.R.S.; Mr. C. A. Hill (chairman of council, Association of British Chemical Manufacturers); Professor W. M. Thornton (Institution of Electrical Engineers); Mr. C. A. Klein (president, Oil and Colour Chemists' Association); Dr. H. H. Morgan; Mr. E. H. Cunningham Craig (Institu-

tion of Petroleum Technologists); Mr. H. D. Searles-Wood (Royal Institute of British Architects); Mr. E. V. Evans (Institution of Gas Engineers); Professor J. W. Cobb; Mr. W. J. U. Woolcock (Association of British Chemical Manufacturers); Mr. J. A. Reavell (vice-president, Institution of Chemical Engineers); and Dr. G. T. Morgan.

Message from the Prince of Wales

After the loyal toasts had been honoured, the president read the following message from H.R.H. the Prince of Wales:—"I am glad to be able to congratulate the Institute of Chemistry of Great Britain and Ireland on the completion of fifty years of useful service. The application of science to the daily life of the community becomes more and more apparent; as a consequence the activities of such societies as yours have an ever increasing value. The Institute has established a standard of professional education and qualification for the practice of the profession of chemistry—a standard which, I believe, is now recognised in every field of work in which the science is pursued. I am satisfied that nothing is more important at the present day for the well-being of our national industries than that they should utilise to the utmost the resources of science, and know that this applies in a high degree to the science of chemistry. I have therefore not only to congratulate the Institute on its past achievements in advancing the efficiency and status of the profession which it represents but to express my best wishes for its increased prestige and influence.—EDWARD P."

The President said he was sure it would be the wish of those present to send a grateful acknowledgment of this message. The Royal Society had not only sent its president (Sir Ernest Rutherford) to the banquet, but had sent the following message:—"The Royal Society offers its most cordial congratulations to the Institute of Chemistry on the completion of its fiftieth year, and looks forward to a continuation and enhancement of the great services which the Institute has already rendered to the science of chemistry."

Delegates from other societies then presented addresses, as follows:—Professor H. B. Baker (Chemical Society); Mr. F. H. Carr (Society of Chemical Industry); Professor E. C. C. Baly (British Association); Mr. E. R. Bolton (Society of Public Analysts); and Mr. C. A. Klein (Oil and Colour Chemists' Association). Messages were also received from Professor P. F. Frankland (past president), and Mr. C. T. Kingzett, a surviving member of the first council.

Sir Alfred Mond's Speech

Sir Alfred Mond, Bart, M.P., proposing "The Institute of Chemistry of Great Britain and Ireland," said that the Institute had been founded primarily to give a status to the professional chemist, and to draw an adequate distinction between him and the other kind of chemist, who sold drugs from behind a shop counter. The influence of the Institute was manifested in the fact that whereas when the Charter was applied for the membership was 430, to-day it was 5,200. Undoubtedly membership of the Institute was now recognised as a hall-mark of professional qualifications and ability, and all the important posts in which chemical qualifications were required were held by the members of the Institute. As a matter of fact, it was impossible to imagine what the world would be like now without chemistry and the analytical and professional chemist. Referring to the list of past-Presidents of the Institute, Sir Alfred said he had been able to count many of them among his personal friends and hoped that equally eminent chemists and scientists would hold the office of president in the future.

That the chemist was making his influence felt was shown in the fact that scientific research had become a catchword among the politicians. In the House of Commons the other day in connection with the debate on the coal industry, it was extraordinary what a lot of people talked of research but who had not the faintest idea of what it meant. Member after member rose and adjured the Government that if they would

only do something for research, the coal problem would be solved; as if it were merely a matter of spending so much money and the thing was done. Those who had been brought up with research and had watched its slow and painfully difficult progress knew perfectly well that research could not be ordered in the same way as one ordered tea or butter at a store. Research, after all, was the work of human genius, and the genius was born, and not made to order. When they found a genius, he should be enabled to do his work unencumbered and unmolested by material wants, surrounded by all the opportunities which scientific apparatus and scientific assistance can give him. Even a little more might be done, and these people might be thought worthy of remuneration, say, equal to that of a successful stockbroker, although the research chemist might not be regarded as doing work worthy of the remuneration of a prize fighter. At any rate, it was work which should not be carried out for a remuneration which just enabled subsistence to be maintained. The reward should be of a more substantial character. The researcher did not research because he wanted to but because he could not help it, and that was why the world had always sweated him and said what a wonderful person he was, without taking any steps to look after him.

Industrial Research

In the matter of industrial research we still had much to learn in this country, and he had been struck during his recent visits to Germany by the scale and magnitude upon which industrial research was carried out there. As a consequence, technical results and financial success was secured, and they had no reason to grudge the Germans this because they deserved it on account of the long and patient research which they conducted and the large sums of money which they spent in the hope that the work would produce useful results. There could not be too much of this work going on in the world. No nation had a monopoly of scientific minds or scientific invention. It was the universality of the spread of science that was one of its chief charms. It had no national boundaries, it knew no creed, and was not limited by language. It was found all over the world, and Great Britain had its part to play in this work.

Great Britain had never been deficient in great minds in the scientific world, as the history of scientific progress had shown throughout the centuries, and to-day they were not devoid of ideas or inventions. What we wanted was more of them, and more support for them, and as much co-ordination of the results as possible. Undoubtedly chemistry had more to do with the solution of the world's problems than any other science, and he wished the Institute an even greater success in the future than it had had in the past, so that when their successors met in another fifty years' time they would have added to the lustre and the already very fine record of success of the Institute, and that they would be able to speak also in no uncertain voice of the good work they had done and the additional laurels they had gained for British science and British chemistry.

The President, replying to the toast, expressed his grateful thanks for what Sir Alfred Mond had said and also for the addresses that had been presented by the representatives of kindred Societies, which were a great encouragement to the Institute and an augury for a continuation of the amity and good feeling that had existed between them for so long in the past. The Institute would always be at their service on every occasion when required in the future. In addition to the addresses that had been presented that evening, greetings, congratulations and good wishes had also been received from the German Chemical Society, the French Society of Chemical Industry, the South African Chemical Institute, the Cape Section of the Institute, the New Zealand Section of the Institute, the Malaya Section of the Institute and the Chemical Industry Club, and he thanked all of them for their kindness and the thoughts expressed.

The Institute had set a high standard of professional qualification and conduct, but at the same time it had not adopted a narrowly dominant attitude in representing the interests of the profession. There were no complaints that the Institute was claiming too much, or that it was trying to impose unfair restrictions either upon its own members or upon the public. It was hopeless to attempt adequately to express gratitude to those who had rendered services to the

Institute in the past, and all he could say collectively was that the policy of the Institute had been framed on the lines of broadminded progress and adaptability. Finally, Professor Smithells paid a tribute to the work of the registrar, Mr. Pilcher, and his able staff.

Mr. Charles A. Hill, proposing "The Founders and Past Presidents of the Institute," referred in turn to all who have been associated with the Institute either as founders or presidents, and coupled with the toast the name of Professor J. Millar Thomson, F.R.S.

Professor J. M. Thomson's Remarks

Professor Thomson in his reply said he had apparently been chosen for this task because not only was he the senior living past-president, but because he was also, he regretted to say, the only one alive of those who attended the small meeting in 1875 which really started the Institute of Chemistry. That meeting was held in the house of Mr. Alfred Manning, whose name some of the younger members of the Institute might never have heard of. Needless to say, it was a matter of great gratification to him now to see the influence and ramifications of the Institute and he could only ask those younger members into whose hands the management of the Institute would in due course come, never to forget the one aim of the original founders of the Institute, viz., the training and teaching of the chemist.

Mr. A. Chaston Chapman, F.R.S., proposed "The Guests," coupled with the names of Sir Ernest Rutherford, P.R.S. and Sir Atul Chatterjee (High Commissioner for India). Sir Ernest Rutherford, P.R.S., who made the first reply, said the great advances that had been made in chemistry during the last 50 years had been in the fundamental ideas of the nature of the atoms and molecules which chemists dealt with. Physics and chemistry had been drawing nearer together during this period, and apparently it all depended upon whether one was a chemist or a physicist as to the views held concerning which had absorbed the other. However, there had been, during the past half century, the discovery of the electron, the proof of the transformation of matter, and the detailed work upon trying to open up the structure of the atom. Finally, there had been the later work, still in the stage of transition, attempting to resolve the whole of matter into the simplest elements and associated with a type of wave motion. In what direction could we look for advance in the next 50 years? It was perfectly clear that the next important advance would be the attempt to solve that most difficult of all problems, the nature and origin of chemical combination. When that was accomplished he did not know what there would be left for the chemist to put his hand to!

Sir Atul Chatterjee (High Commissioner for India) also replied briefly.

The final toast was "The Chairman," proposed by Mr. E. R. Bolton, to which Professor Smithells replied in a few words.

Franco-German Dye Pact: I.G. Statement

THE I.G. has issued an official announcement regarding agreement with the French chemical industry. The sale and production of dyes is to be divided between the two parties, while economic independence will be maintained. The agreement is expected to be the first of a series, which will, it is hoped, lead to international understanding. Negotiations have, states the announcement, been opened with nations other than France. To this statement may be added information from other sources, which indicates that on the French side the participators are the Kuhlmann group and the Société Anonyme des Matières Colorantes. It is said that the French production has been fixed at 15,000 metric tons, 10,000 for home consumption and 5,000 for export.

Solid Content of November London Air

LONDON's fogs for November have been officially "weighed," and it has been ascertained that the soot particles and the other impurities that make up a fog amounted on an average, during the period, to 1.18 lb. per million cubic yards. This figure, which is given by Dr. J. S. Owens, secretary to the Advisory Committee on Atmospheric Pollution to the Air Ministry, is derived from records taken in South Kensington. It shows a marked increase over the figure for the corresponding period of 1926, which was 0.86 lb. per million cubic yards.

Preventing Oil Pollution in Seas and Harbours

Mr. Garland's Paper at Liverpool

On Friday, December 16, a paper by Mr. C. S. Garland, entitled "Oil Pollution of Seas and Harbours—and a Remedy," was read (in Mr. Garland's unavoidable absence) by Mr. A. Beale, before a joint meeting of the Chemical Engineering Group and the Liverpool Section of the Society of Chemical Industry. Mr. Garland's paper contained an account of a type of filter which had been devised to work in conjunction with the streamline oil separator.

THE earlier part of Mr. Garland's paper dealt with the increase in the use of oil fuel in ships, and the consequent increase in sea and harbour pollution by oil. There are three principal sources of pollution: discharge of oil-contaminated ballast, bilge, and other water; the cleaning and flushing of oil tanks at sea; and accidents. The effects of the oil are (in addition to the loss of valuable oil) danger of fire in harbours, wharves, etc., where oil accumulates; destruction of fish and damage to fishing nets and gear; discomfort to bathers and damage to their clothes and boots; and finally, the destruction of sea birds, which die a lingering and painful death owing to the impregnation of the wings and feathers with oil.

The Nature of the Problem

Before discussing the methods of dealing with the problem, it is, perhaps, useful to analyse exactly what has to be done. Large oil-using ships will pump from 1,000 to 2,000 tons of ballast water at the end of each voyage, and this will normally be carried in tanks of up to 200 or 250 tons capacity. The average content of oil in each tank will be from 2 to 3 per cent., and the bulk of this (probably 95 per cent.) will be floating on the top of the water, and will be discharged in a body when the bottom of the tanks is reached. It has been demonstrated that this 95 per cent. of the oil is in masses averaging more than 0.2 mm. in diameter, which will rise to the surface of the mixture, if eddy currents are avoided, in from 1 to 2 min. The balance of 5 per cent. or so of the oil can be divided into two forms, which the American Bureau of Standards has designated as "suspended" and "emulsified" oil. The suspended oil consists of particles of from 0.01 to 0.2 mm. in diameter, which will settle out in water free from disturbing currents in 2 to 4 hours. There remains a small quantity (0.1 to 0.5 per cent.) of oil in a truly emulsified form, which is still completely dispersed in the water even after months of standing in a quiet condition.

In the past a number of efforts have been made to develop separators for the removal of the oil from the water emptied. One characteristic of nearly all the designs is that increase in capacity can be obtained only by increasing the size of the vessel, and therefore the cross sections of the passages through which the oily mixture has to pass. In this case, unless special precautions are taken to avoid eddying, the cross-section of the separator must be extremely large for a reasonable output.

The Stream-Line Oil Separator

In the separator invented by Hele-Shaw and Beale in November, 1925, these difficulties have been avoided by providing for increased throughput by the multiplication of the same standard tube unit, which is used even in the smallest sizes, and as the number of tubes which can be packed into a given space varies as the square of the diameter streamline conditions can be maintained in machines of reasonable size.

In its simplest form the separator consists of a cylindrical vessel containing a large number of tubes of small diameter ($1\frac{1}{2}$ in.) arranged between two tube plates so placed that the whole of the oily mixture flows through the tubes. The tubes are perforated along their upper surface to provide for means of egress of the collected oil into still water, there being a direct connection between the dead space round the tube and the oil collecting outlet. The length and diameter of the tubes are so arranged that steady streamline flow is ensured when the separator is working at anything up to 50 per cent. above its rated output, while the dimensions of the whole plant are adjusted so that there is ample time during the passage of any given volume of oily mixture through the plant for the complete separation of all the oil which can be removed by gravitational means.

It has been recognised for some time past that it is impossible, without the aid of a filter or some coagulating device, to

remove from the water the last traces of emulsified oil, and to bring performance to the very high standard needed if the formation of oil films is to be prevented. A type of filter has been devised to work in conjunction with the streamline oil separator, which depends upon the adhesive properties towards oil of the surface of glass silk. The glass silk, the filaments having a diameter of 0.009 in., is pressed into an annular basket consisting of galvanised wire mesh or galvanised expanded iron, so arranged that the thickness of the glass silk layer is equal throughout. The advantages of this material are (among other things) that (1) it has the very high surface area of over 9,000 sq. ft. per lb.; (2) it will deal with a very large quantity of water before needing cleaning, as each lb. will attract to itself 2.83 lb. of oil before becoming clogged.

A number of these filter units are suspended in a mild steel riveted or welded casing from a top plate by means of a cast iron top member. This facilitates drainage of the elements during the cleaning operation, when steam is admitted in the reverse direction and blows out the collected oil, which runs into bilges, whence it is in due course pumped through the separator and at once separates as bulk oil.

Application of the Separating Plant

Many plants of this type have been installed, including a barge plant of 200 tons per hour in use by H.M. Admiralty; a plant of 150 tons per hour installed in s.s. *Majestic*; standard 50-ton plants fitted to a number of vessels of the Grace Line, built by the Furness Shipbuilding Co., etc. Some interesting points arose in the two-day acceptance trials of the Admiralty barge, which took place on June 8 and 9 last, when two lots, each of 1,000 tons of water, contained in four tanks of the R.F.A. tanker *Linol*, were pumped through the plant in a total period of 10 hours. During the first 5 hours, the mixture to be dealt with was tank washings, containing from 1 to 2 per cent. of oil, while during the second period mixtures of sea water with 5, 10 and 15 per cent. of Navy fuel oil was separated. Owing to the viscous nature of the oil and the large quantities of air pumped with it at the end of each tank, it was found necessary to run the plant at a rate exceeding 300 tons per hour, in order to obtain the necessary average of 200 over the period.

The separator has also been applied on land to the recovery of oil from the rain water and washings from oil storage yards—for dealing with the oily and tarry effluents from gas works and water-gas plants, and similar industrial wastes. The special form of filter is of service for the de-oiling of condenser water for boiler feed.

Prior to the meeting the members were entertained on board the Elder Dempster liner *Adda*, a ship driven with oil on a Diesel engine, where an interesting inspection of the engine-room and various appliances was carried out.

Discussion

Professor J. W. Hinchley asked a question regarding the provision of a partition in the upper part of the apparatus. With regard to this, Mr. Beale explained that the filter formed the base of their design for practical purposes. In the case of a ship installation they had a filter of such capacity that it would not need cleaning while the whole of the ballast water was put through, and the whole of the cleaning could be done later, even when the vessel was in port. In the case of other equipment they duplicated the filters in order that while the first set was being cleaned the second set could be put into operation and worked continuously. The design showed that a partition actually existed in the oil chamber.

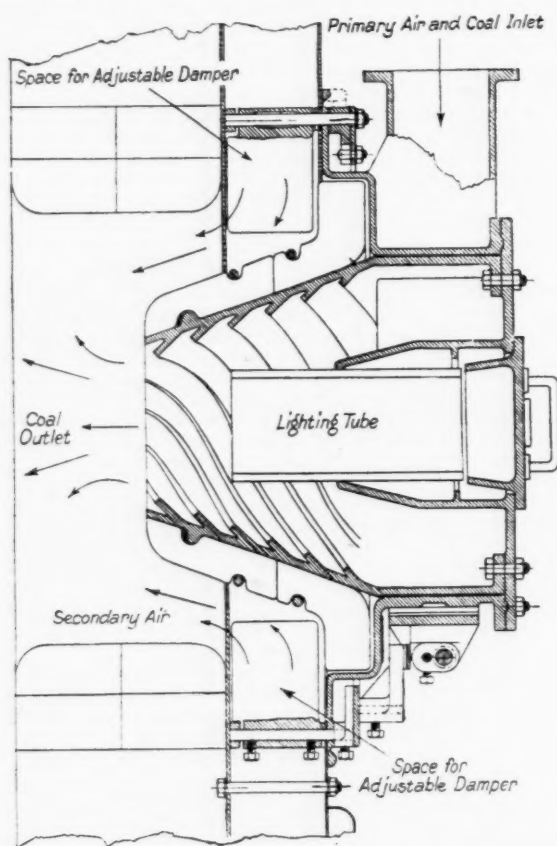
Messrs. Billington and Mansbridge also took part in the discussion.

Advance in Pulverised Fuel Firing

British Short Flame Burner

IN connection with pulverised fuel firing for steam boilers as well as furnaces generally in the chemical and many other industries, a great advance is represented by a new burner that is claimed to have solved the problem of flame length, giving complete combustion in 10 feet only, instead of about 30 feet as at present. At the same time, up to 150,000,000 B.Th.U., say 5-6 tons of coal or 4 tons of oil per hour is taken by a single unit, with extremely low air pressure. The design is the result of extended investigation by the research staff of International Combustion, Ltd., of London, well-known of course for "Lopulco" pulverised fuel, and the new burner has been operated at Barrow continuously for a number of months past.

A solution is also claimed for other difficult problems in turbulent burner design, such as low air pressure and power consumption, elimination of "stratification" troubles at the burner tip, absence of complicated parts, one simple adjustment only, and ability to stand the heat.



As regards the details of the design, about 15 per cent. of the total volume of the air, at only about 2 in. W.G., is supplied direct round the centre of the burner, along with all the coal by means of a concentric casing, while 85 per cent. of the total volume as secondary air enters in another concentric casing at 1 in. W.G. behind the first casing. This secondary air is given a violent cyclonic motion in addition to that of the primary air and fuel, by means of spiral ribs, so that separation of air and coal particles at the burner tip is impossible, irrespective of what happens in the primary air circuit on the way.

Finally, the only adjustment necessary is a single slide damper on the secondary air supply pipe. When once set, no further control, it is stated, is required to give complete combustion, although many turbulent burners have been largely dependent upon the personal skill of the operator, with constant adjustment necessary to suit varying steam demands.

Biochemistry at Birmingham

Professor A. R. Ling's Address

A JOINT meeting of the Birmingham and Midland Section of the Society of Chemical Industry and the Institute of Chemistry (Midland Section) was held on Friday, December 16, in the new buildings of the department of bio-chemistry of fermentation at the University of Birmingham, at Edgbaston.

Professor Ling, who presided, gave an interesting account of recent work in the university biochemical laboratories. Professor Ling stated that when he took up his position as head of the department, in 1920, his attention was directed in the first place to the chemistry of starch, a subject on which he had worked for so many years previously. Methods had been devised for estimating starch in such materials as barley, wheat and potatoes. These methods were now in use in various agricultural stations. It had long been known that starch in the form of granules consisted of more than one substance, and in collaboration with D. R. Nanji, he (Professor Ling) had shown how these two substances—amylose and amylopectin—might be separated. They were present in starch granules in the constant ratio of 2:1. Another substance had been recognised as a constituent of the starch granules of cereals by Professor Schryver, who regarded it as hemicellulose. Amylose when treated with the diastase present in barley or in malt was converted into the sugar named "maltose," whilst amylopectin was converted by the diastase of barley into a substance to which Ling and Nanji had given the name $\alpha\beta$ -hexa-amylose, together with maltose. By the action of malt diastase on this $\alpha\beta$ -hexa-amylose a series of substances named malto-dextrins were produced, together with a trisaccharide, maltose, and isomaltose.

The substances known as pectins had long been recognised as constituents of the cell wall of plant tissues, but their nature had remained obscure until quite recently. Work carried out in the department had established the constitution of the so-called pectic acid obtained from these pectin bodies, which were of importance commercially in the confectionery industries on account of their property of forming jellies when boiled with sugars. Researches carried out in the department had explained the formation of the colouring matter, caramel, when certain sugars were treated with ammonia and subsequently heated, and they had also explained the formation of colour and flavour in barley germinated by the malting process, when it was heated on the kiln. This was a brief outline of some of the results which had been achieved in the department during the past eight years.

Film Works Fires: New Regulations

DRAFT regulations designed to increase the safeguards against the risk of fire in works devoted to the stripping or drying of cinematograph film have been issued by the Home Office. It is explained in a covering letter that these processes are at present governed by the Celluloid Regulations, 1921, but that the serious fires which have occurred at works within the last eighteen months—and especially the disastrous fire in September last at the premises of Film Waste Products, Ltd., which resulted in the loss of five lives as well as the destruction of the works—have shown that the risks from fire in connection with these processes are of so grave a character as to necessitate the adoption of much more stringent precautions. In these circumstances the Secretary of State has decided that steps should be taken at once to replace the existing regulations, so far as regards the processes of stripping and drying of cinematograph film, by an amended code embodying the further requirements considered necessary in the interests of safety, and the draft regulations, which follow with certain additions and modifications the draft regulations recently issued for the manufacture of cinematograph film, have been drawn up for this purpose. It is hoped that the proposed regulations will be accepted without question, but if objections of substance are taken either by the occupiers or by the workpeople, or by any other persons affected, these objections will, under the statute, be the subject of full inquiry by a competent person appointed by the Secretary of State. If, therefore, any person desires the regulations to be further considered, he is requested to lodge objection in accordance with Section 80 of the Factory and Workshop Act, 1901.

Reviews

THE INDUSTRIAL CHEMISTRY OF THE FATS AND WAXES. By T. P. Hilditch, D.Sc. (Lond.), F.I.C., with an introduction by E. Frankland Armstrong, D.Sc., LL.D., F.R.S. London: Baillière, Tindall and Cox. 1927. Pp. xv, 461. 18s.

This work is one of a series of volumes, giving a comprehensive survey of the chemical industries, now under the editorship of E. de Barry Barnett. The author explains that as the term "oil" is used equally for mineral oils, essential oils, etc., he proposes to discontinue its employment in the case of fats, and to classify fatty oils and fats as "liquid fats" and "solid fats." The idea is to be recommended from the scientific point of view, but it has practical difficulties, for, apart from the fact that the public will always call certain fats "oils" no matter how many books call them "fats," the booksellers may index this work under "fats" with the result that the seeker of knowledge on oils may fail to find what would prove to him an extremely useful and instructive work. The book does, in fact, fulfil a very urgent need because it covers a very wide scope in clear and practical language.

Commencing with an explanation of the chemical nature of fats, their composition and occurrence in nature, it passes to their transformation for industrial use and deals with the great edible fat and soap industries, candle manufacture, illuminants and the production of glycerine; to the use of oils, fats and waxes in paints and varnishes and the application of oils to fibres, finally dealing with fatty lubricants.

All these subjects are dealt with in such a manner as to supply a general idea of the industry to one who wishes to acquire practical knowledge thereof, and are presented by one who obviously has that practical knowledge, and has not to depend upon his skill as an abstractor for information.

In this connection one might complain of the absence of references to current literature, and find the list of references given at the end of sections bothersome when any attempt is made to connect them up with the subject-matter of those sections.

There are no illustrations in the book, and many will be thankful that the author has refrained from presenting them with a manufacturer's catalogue, though, perhaps, in a few cases it is going to the other extreme, as it would be impossible to carry out a determination of the Reichert-Meißl-Polenske-Kirschner test without referring elsewhere for the standard apparatus essential for the purpose.

A certain number of lapses have been noticed in passing, such as the spelling of *Balaeroptera* which should be *Balaenoptera*, *Pedilanthus pavanis* which should be *P. pavonis*, *Cannabis sativa* which should be *Cannabis sativa*, and *Elaeis Guineensis* which should be *Elaeis guineensis*. The reader is told that Chinese vegetable tallow surrounds the seeds of *Stillingia sebifera*, but is not told of the liquid oil inside, though figures for this oil are given in tables. *Aleurites montana* is omitted as one of the sources of China wood oil.

In describing the method of obtaining palm oil from the pulp no mention is made of the centrifugal separation now successfully employed. Under the refining of fats the author refers to the removal of free fatty acids by distillation as a process "not yet applied technically"—a more cautious man might have avoided a mis-statement by adding "according to the knowledge of the author."

Such small blemishes, however, are completely lost in the mass of sound information, and the book undoubtedly fulfils a real need as one from which reliable knowledge of important facts about fats and oils can be quickly and readily obtained.

E. R. BOLTON.

CHEMISTRY OF THE OIL INDUSTRIES. By J. E. Southcombe, M.Sc. London: Constable and Co., Ltd. 1926. Pp. 224. 12s. 6d.

The aim of the author in writing this book has been "to fill the gap between the elementary text-books of pure chemistry and the numerous technical treatises and monographs of a highly specialised character." This is a difficult gap to fill, but Mr. Southcombe has selected, arranged and apportioned his subject matter in a very satisfactory manner and has written in an interesting style.

The book opens with two introductory chapters (occupying a total of 40 pp.) on "Organic Chemistry" and "Colloid Chemistry" respectively. The third chapter (34 pp.) deals in a very general way with "Mineral Oils." The remainder of the book is devoted almost entirely to the saponifiable oils, fats, and waxes, although a further brief reference to mineral oils occurs in an article of 2 pp. on "Lubrication and Lubricants."

General methods are given for the extraction and purification of the saponifiable oils as well as general methods used in analysing these materials. The most important oils, fats and waxes are then described individually, whilst three chapters (50 pp.) are devoted to industrial applications and technical methods of manufacture.

Although it would be easy for the reviewer specially interested in any particular branch of the oil industries to criticise many parts of this book, considering the amount of space at the author's disposal the information contained therein is well balanced and reasonably accurate and is presented in such manner as to promote thought and inspiration to the student and investigator.

H. H. M.

NOXIOUS GASES AND THE PRINCIPLES OF RESPIRATION INFLUENCING THEIR ACTION. By Yandell Henderson and Howard W. Haggard. American Chemical Society Monograph Series. New York: The Chemical Catalog Co. Pp. 220. \$4.50

This book does *not* deal with gas warfare, but, on the contrary, with the noxious gases which occur in industry. "It is written for chemists and engineers rather than for medical men. The reason is that the conditions under which gas poisonings usually occur are such that no physician sees the cases until too late to influence their course materially. Chemists are in immediate contact and control." The authors begin by giving an account of the mechanism of respiration, the respiratory functions of the blood, and the absorption and elimination of volatile substances. This is followed by an exhaustive account of noxious gases and vapours, and their action on the human organism, the gases being divided for this purpose into asphyxiants, irritant gases, volatile drugs and druglike substances, and inorganic and organometallic gases. Finally, there is a very valuable chapter on the prevention and treatment of poisoning by noxious gases, in which are discussed precautionary measures, gas masks and other apparatus, first aid treatment and artificial respiration, etc.

Both from the points of view of prevention and cure, it would be an excellent thing if all chemists read this book, since most of them undoubtedly pay too little heed to possible danger. Moreover, increasing experience invariably shows risks in previously unsuspected quarters; as, for example, in the case of mercury vapour, the dangers of which have been strongly emphasised in the last few years by Continental and American workers. In view of the deaths which followed the first use of lead tetraethyl as an anti-knock in the United States, there is considerable point in one issue raised by the authors (p. 193): "New compounds of a volatile nature are being introduced into manufacture and trade in increasing number and amount. Physiological investigation, to define the dangers attending the use of these substances, should be a matter of course, prior to their introduction; it should be a legal requirement and strictly enforced."

It is to be hoped that this book will receive the wide perusal which is merited alike by the importance of the subject and by the clear and readable manner in which it has been dealt with by Messrs. Henderson and Haggard.

C. A.

THERMOMETRIC CONVERSION CHART. By Percy L. Marks, L.R.I.B.A. London: Crosby, Lockwood and Son. 3s. 6d.

This chart gives the following temperature scales: Absolute, Centigrade, Fahrenheit, Réaumur, and de l'Isle, the range being from zero to 500° on the absolute scale. The scales are placed side by side, so that they can be converted into one another by the application of a straight edge. In addition, factors for the various interconversions are given. The chart is enclosed in a stout cover.

A Vision of the Chemist's Future

To the Editor of THE CHEMICAL AGE.

SIR,—Your excellent editorial of December 3 sets out very fairly the position of the Association, and it will perhaps be of interest to your readers if your remarks are somewhat amplified.

Unemployment benefit and legal protection, although of extraordinary value to all chemists, have now become part of our ordinary routine, and we are set free to discover new fields of activity, and wide fields do exist quite untouched and undeveloped. Your editorial alludes to the "bread and butter" and to the "vocational" ideals, and a synthesis of these two is one of our visions of a near future.

Vocational chemistry is of extraordinary value, and without that ideal the profession would cease to exist, but we have growing up with us a type of chemist, who, rather than for vocation or for bread, however well buttered, is out for big business; the one who sees through his laboratory apparatus as through a magnifying glass the vision of the chemist who shall direct huge undertakings rather than laboratories. A large proportion of our efforts in the future will be directed towards the encouragement of that spirit; to the "breeding," if such a thing be possible (and why should it not be possible?), of that type of man. Chemical industry is at present singularly fortunate in its directors, but sooner or later they must pass, and the filling of the vacant places ought not to be a mere matter of chance. Over and over again we have insisted that the chemist should do something to acquire business instincts and a sound business knowledge. There is plenty of evidence that where scientific training and instinct for business are combined, as occasionally they are, great results may be expected, but the material is at present scanty. We shall endeavour to do our part to ensure that the supply of such material is available in increasing quantity.

Here is at once a policy strictly neither professional nor economic. With such a goal ahead the chemist must consider chemistry as an instrument rather than as an end itself, and such a one is likely to be interested in the maximum rather than in the minimum wage.

It would demand too much of your valuable space to develop in full the implications of this policy and the contribution the Association hopes to make to it, but sufficient has been said, I hope, to leave the individual to work the implications out for himself.—I am, etc.,

HENRY T. F. RHODES,
General Secretary,

"Empire House," British Association of Chemists,
175, Piccadilly, London, W.1.

Appointments Vacant

Two Junior Assistants (one physical chemistry, one engineering), in the Research Institute of the Linen Industry Research Association, Lambeg, County Antrim, Ireland.—The Secretary.

A Lecturer in Chemistry (chiefly organic) in the University of Durham (Durham Division).—The Head of the Department of Science, South Road, Durham. January 2, 1928.

The Ramsay Memorial Chair of Chemical Engineering, tenable at University College, London.—The Academic Registrar, University of London, South Kensington, S.W.7. January 23, 1928.

A Junior Assistant Chemist for Government Laboratory.—The Commandant, Experimental Station, Porton, Wiltshire. Further details will be found in our advertisement columns, p. xviii.

A Principal for the Technological Institute, Cawnpore, to act also as head of the department of general applied chemistry.—The Secretary to the High Commissioner for India, General Department, 42, Grosvenor Gardens, London, S.W.1. January 15.

A Lecturer in Inorganic and Physical Chemistry at the Sir John Cass Technical Institute, Jewry Street, Aldgate, London, E.C.3.—The Principal. December 31.

Mechanical Draughtsmen with experience in the layout and design of chemical plant.—Synthetic Ammonia and Nitrates, Ltd., Billingham, Stockton-on-Tees. Further details will be found in our advertisement columns, p. xviii.

Chemical Matters in Parliament

The Dead Sea Concession

In answer to a question by Major Glyn (House of Commons, December 15), Mr. Ormsby-Gore said that, so far as he was aware, the first person to approach the Government on the subject was Major Tulloch, in January 1918. Four definite applications were received. On April 9, 1927, both Major Tulloch and Mr. Novomeysky were informed that the High Commissioner for Palestine agreed in principle to grant them a concession provided that suitable terms and conditions could be agreed upon, and subject to their giving satisfactory financial guarantees. As the terms of the concession were still being negotiated, he could not say how long the discussions were likely to take. Replying to questions by Col. Howard-Bury (House of Commons, December 19) Mr. Ormsby-Gore stated that in 1926 there were discussions between certain of the applicants with a view to their combining their interests, but the applications subsequently submitted were made on behalf of individual groups and not on behalf of any combine.

Replying to further questions by Captain Foxcroft, he said that the Government were endeavouring to arrange that any concessionaire selling outside Palestine would not enter into an agreement with any of the three big German monopolies without the concurrence of the Government. Of course it was very difficult to sell articles of this kind in the world markets except by some form of agreement with existing organisations. Mr. Novomeysky's first formal applications was made to the High Commissioner, who reported its receipt to the Secretary of State in July, 1921. The High Commissioner also reported that Mr. Novomeysky had, since 1911, been working on the question of the extraction of salts from the Dead Sea. Mr. Novomeysky was a member of the Institute of Mining and Metallurgy.

Colonel Howard-Bury (House of Commons, December 20), asked the Under-Secretary of State for the Colonies whether he was aware that a British group conducted investigations into the Dead Sea potash from 1916 to 1918 and, after drawing up a fully worked-out scheme, made a formal application to the Foreign Office in October, 1918; that this was the first fully-prepared scheme for the commercial extraction of the salts of the Dead Sea presented to His Majesty's Government; and that this application also included a hydro-electric scheme for the River Jordan, the concession for which was later granted to Mr. Rutenberg; and, seeing that the priority of this application was admitted in a letter from Sir Arthur Colefax, the potash controller of the Ministry of Munitions, to this British group, dated September 3, 1918, would he say why this application was rejected in favour of the Novomeysky group? Mr. Ormsby-Gore replied that he was aware that a certain group approached the Foreign Office in October, 1918, and were informed that His Majesty's Government had no power under the circumstances then existing to grant commercial concessions in Palestine. There was no record of any promise that any application or scheme would be given preferential treatment on grounds of priority.

Beet Sugar Factories

In reply to Mr. Thurtle (House of Commons, December 19), Mr. Guinness stated that fourteen beet sugar factories were actually engaged in the manufacture of home-grown sugar in 1926-27. In reply to Mr. Buxton, he stated a further five factories were contemplated for next season.

River Pollution (Beet Sugar Factories)

Lord Eustace Percy, replying to Mr. O. Nicholson (House of Commons, December 20), stated that it was not yet possible to say whether the working-scale experiments, which were in progress under the supervision of the Water Pollution Research Board of the Department of Scientific and Industrial Research, would lead to a complete practical solution of the problem of the purification of beet-sugar factory effluents.

TO SATISFY THE GROWING DEMAND for mineral fertilisers in Russia it has been decided to build two new factories for the production of superphosphate, one near Moscow and another in the Ukraine. The Moscow plant will have an annual capacity of 80,000 tons of superphosphate and of 40,000 tons of concentrated superphosphate, while the Ukraine plant's capacity is to be 100,000 tons of standard superphosphate.

From Week to Week

SIR MAX AND LADY MUSPRATT arrived at Colombo, Ceylon, last week.

SWISS CHEMICAL IMPORTS FOR OCTOBER amounted to 2,900,000 frs. and in September to 2,800,000 frs.

DR. A. K. MACBETH, reader in chemistry in the University of Durham, has been appointed Professor of Chemistry in the University of Adelaide.

MR. L. ORANGE, F.I.C., is leaving Rutherford College, Newcastle, to take up the position of principal of Mansfield (Nottingham) Technical College.

ARTIFICIAL SILK NEWS: Mr. R. H. Line, who was responsible for the erection of plant at Courtaulds, Ltd., Castle Works, at Flint, has been appointed chief engineer to the Branstons Artificial Silk Co.

DISEASES OF OCCUPATION reported during November under the Factory and Workshop Act or under the Lead Paint (Protection Against Poisoning) Act, 1926, included one case of mercurial poisoning (fatal).

THE DIRECTORS OF THE BUELL COMBUSTION Co. have contracted for disposal of the foreign patents to Buell Combustion (Foreign), Ltd., for £72,500 in cash and £65,000 in deferred shares. The total capital of the new company is £165,000.

SALES OF NITRATE OF SODA reported by the Producers' Association since the introduction of free selling on April 14 up to November 30, amounted to 2,533,653 metric tons. Considerable sales of the fertiliser have since been effected at prices ranging from 16s. 10d. to 17s. 5d. per metric quintal.

A CONTRACT HAS BEEN placed with the Furness Shipbuilding Co., Ltd., for the construction of a new low-temperature carbonisation plant at the New Lount Colliery of the Leicestershire Pipe and Colliery Co. Negotiations are in progress for the erection of similar plants at Barnsley colliery.

THE UNITED STATES DYESTUFFS MANUFACTURERS, the Chemical Company of America, New England Aniline Works, and the Tower Manufacturing Co. have merged their interests in a new firm to be known as the Chemical Dye Corporation. As soon as is possible all work will be done in one factory.

RECENT WILLS INCLUDE:—Mr. Frank Yardley, of Solihull, chemical manufacturer, £71,967 (net personalty £41,675).—Sir Albert Gerard Muntz, metallurgist, formerly chairman of the Non-Ferrous Metals Committee of the Department of Scientific and Industrial Research, £12,784 (net personalty £11,253).

THE ALUMINIUM CORPORATION, LTD., held its general meeting on Friday, December 16, in London, when it stated that the Norwegian Aluminium Factory had been established, and that the Corporation had already received the first deliveries of metal, under their arrangement to act as sole selling agents for the factory.

THE INQUIRY conducted by Major T. H. Crozier, chief inspector of explosives, and Professor J. S. Brame into the proposal of the Port of London Authority to permit petrol-laden ships to go up the Thames as far as Purfleet, was continued this week in London, and on Wednesday was adjourned until January 10.

A SALES AGREEMENT has been concluded between the Rhenania-Kunheim Verein Chemischer Fabriken A.-G. and the I.G. Farbenindustrie A.-G. whereby the latter takes over the sale of a number of the products of the former. The object of the agreement is to effect economies in the sale of barium carbonate, barium sulphide, sulphur in lumps and roll, and sodium sulphide "drops."

MR. G. S. W. MARLOW, B.Sc., F.I.C., will give a short course of lectures on "Law as Related to Industrial Chemistry," catering for the needs of those engaged in chemical, metallurgical, and associated industries, at the Sir John Cass Technical Institute, Jewry Street, Aldgate, London, E.C.3, on Tuesdays, from 7 to 8 p.m., commencing on January 24, 1928. Dr. H. J. S. Sand will be in charge of a course on "Electrolytic Analysis," consisting of five lectures and practical work for analysts and others.

HEXYLRESORCINOL has hitherto been used as an internal antiseptic, but not for general antiseptic work, since a proper solvent for it had not been found, so that it could not be used as a disinfectant solution. Drs. Leonard and Feirer, of the Johns Hopkins School of Hygiene, now claim that the substance may be used as a general antiseptic by utilising the solution in aqueous glycerin. The product is said to have high bactericidal power, and very little effect on the body tissues.

UNEMPLOYED INSURED PERSONS in Great Britain and Northern Ireland at November 21 in the chemical and allied industries were as follows: chemicals manufacture, 5,867 (males 5,137, females 730); explosives manufacture, 1,140 (males 873, females 267); paint, varnish, japan, red and white lead manufacture, 873 (males 704, females 169); oil, grease, soap, glue, ink, match, etc., manufacture, 5,111 (males 4,276, females 835). Percentages unemployed in the same order were: 6.1 (a decrease of 5.3 per cent. on November, 1926); 6.0 (a decrease of 6.1 per cent.); 4.7 (a decrease of 1.7 per cent.); and 6.4 (a decrease of 2.6 per cent.).

FATAL INDUSTRIAL ACCIDENTS reported during November included five in chemical, etc., factories.

AN EXPLOSION DESTROYED the Helios chemical works at Dorpat (Esthonia). Eight workmen were killed.

WOLVERHAMPTON TOWN COUNCIL propose to accept the tender of the Paterson Engineering Co. for the installation of a filtration plant at Wolverhampton Baths at a cost of £2,615.

GRANVILLE GULLIMAN AND CO., photographic and chemical materials merchants, announce that they have changed their Leamington Spa address to 29, Warwick Place, Leamington Spa.

THE USE OF PRESERVATIVES in butter and cream will be prohibited as from January 1 next, under an order made by the Minister of Health. A ban is already laid on the use of preservatives in other kinds of dairy produce.

THE ANNUAL DINNER of the Midland Varnish Paint and Colour Manufacturers' Association was held on Friday, December 16, at the Queen's Hotel, Birmingham, and was attended by a representative company numbering about 70.

THE GAS LIGHT AND COKE Co. announces a further reduction in the price of gas of two-fifths of a penny (0.4d.) per therm, or 2d. per 1,000 cubic feet. This reduction will take effect as from the reading of the meter indices during the current month.

ENGLISH CHINA CLAYS, LTD., have acquired the Rosevear and Imperial China Clay Works, in the neighbourhood of Bugle. This new acquisition follows closely upon the acquisition by English China Clays of the North Goonbarrow and Great Halviggan China Clay Works.

THE SOUTH WALES SECTION of the Institute of Chemistry held its annual meeting at Swansea last week. Mr. C. M. W. Grieb, of the Mond Nickel Co., was elected chairman for the ensuing year, and Dr. A. G. Ramsay, of British Copper Manufacturers, was elected honorary secretary.

"HYGROMETRIC TABLES for the Computation of Relative Humidity, Vapour Pressure and Dew Point from Readings of Dry and Wet Bulb Thermometers Exposed in Stevenson Screens" (Second Edition) has been compiled by the Meteorological Office, and is published by H.M. Stationery Office, price 2s. net.

THE UNITED MOLASSES Co., LTD., held an extraordinary general meeting in London on Tuesday for the purpose of increasing the capital of £1,500,000 by the creation of an additional 500,000 ordinary shares of £1 each and authorising the issue of any of the unissued shares. The resolutions were passed unanimously.

THE DUDELL MEDAL FOR 1927 has been awarded by the Council of the Physical Society to Dr. F. E. Smith, F.R.S. The medal is given annually for work in connection with the development of scientific instruments, or of materials used in their manufacture. Dr. Smith is Director of Scientific Research at the Admiralty.

GUIDO MEISEL, AN AMERICAN CHEMIST, who entered Germany last spring as a representative of the Portsmouth Dye and Chemical Co., is said to have been in prison in Dusseldorf since June, charged with commercial espionage. American official intervention is being sought upon his behalf, as it is said that the authorities have denied him a speedy trial and refuse to inform him of the exact nature of the charges under which he is being held.

THE MARGARINE UNION, LTD., have made the following offer to holders of ordinary shares in Van den Berghs, Ltd.: To exchange their ordinary shares of 5s. each fully paid for ordinary shares of £1 each fully paid of Margarine Union, Ltd., at the rate of two Van den Berghs' shares for five Margarine Union shares. A similar offer has been made by the associated company, the N. V. Margarine Unie, to the shareholders of N. V. Anton Jurgens' Vereenigde Fabrieken.

Obituary

DR. W. EICHHOLZ, director of research to the famous German Merck company, on December 8.

MR. SAMUEL W. FAIRCHILD, vice-president of Fairchild Brothers and Foster, the New York chemical manufacturers, on November 13, aged 75.

MR. CHARLES B. MANVILLE, aged 92, at his home, in Pleasantville, U.S.A. He discovered the asbestos beds in Wisconsin and controlled a number of companies there and in Ontario.

DR. H. C. WHITE, for 55 years professor of chemistry at the University of Georgia, in Athens, Georgia, U.S.A., at the beginning of December. He had done much work on agricultural chemistry.

MR. WILLIAM KING-BAKER, a director of Baker Perkins, Ltd., engineers, on Sunday, December 18, at Acton, aged 72. He represented Acton on the Middlesex County Council for eighteen years until 1919. A native of Canada, he wrote many books on that country, and among his other literary works was a history of Acton.

SIR FREDERICK WILLIAM FISON, on Tuesday, December 20, aged 86. He was educated at Rugby and Christ Church, Oxford, took an M.A. degree, and was elected a member of the Chemical Society. He abandoned the idea of a scientific career, and entered the business of his father, a mill-owner. Subsequently he became a prominent industrialist, and entered Parliament.

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- Modern spectroscopy as applied to the textile industries. S. J. Lewis. *J. Soc. Dyers and Colourists*, December, pp. 391-393.
- ORGANIC.—Organic compounds of arsenic. III. Tri-*o*-phenylenediarsine. N. P. McClelland and J. B. Whitworth. *J. Chem. Soc.*, November, pp. 2753-2757.
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- SUGARS.—The constitution of the disaccharides. XVI. Cellobiose. W. N. Haworth, C. W. Long and J. H. G. Plant. *J. Chem. Soc.*, November, pp. 2809-2814.

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- Fractionation analyses of several fuel gases with special reference to illuminants. W. P. Yant and F. E. Frey. *Ind. Eng. Chem.*, December 1, pp. 1358-1361.
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- Recommended specifications for analytical reagents. W. D. Collins, H. V. Farr, Joseph Rosin, G. C. Spencer, and E. Wickers. *Ind. Eng. Chem.*, December 1, pp. 1369-1372. Gives the specifications of the analytical reagents committee of the American Chemical Society, dealing with 85 per cent. molybdic acid; molybdic anhydride; phosphoric acid; arsenic trioxide; barium nitrate; carbon disulphide; carbon tetrachloride; potassium dihydrogen phosphate; sodium nitrate; sodium peroxide; sodium dihydrogen phosphate; sodium sulphide; and stannous chloride.
- GENERAL.—The relation of vapour pressure to particle size. S. L. Bigelow and H. M. Trimble. *J. Phys. Chem.*, December, pp. 1798-1816.
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- The system $\text{MgSO}_4 \cdot \text{H}_2\text{O}$ from 68° to 240° C. H. L. Robson. *J. Amer. Chem. Soc.*, November, pp. 2772-2783.
- Rate of reaction between bromine and unsaturated acids as evidence of stereoisomerism. C. A. Knauss and J. G. Smull. *J. Amer. Chem. Soc.*, November, pp. 2808-2815.
- ORGANIC.—The preparation and base strengths of some amines. W. H. Carothers, C. F. Bickford and G. J. Hurwitz. *J. Amer. Chem. Soc.*, November, pp. 2908-2914.
- The structure of the hydrocarbon $\text{C}_{17}\text{H}_{18}$ obtained by the dehydration of *tert*-butyldiphenylcarbinol. D. E. Bateman and C. S. Marvel. *J. Amer. Chem. Soc.*, November, pp. 2914-2919.
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- Smoke abatement methods used in Salt Lake City. H. W. Clark. *Combustion*, December, pp. 389-392.

- RUBBER.—Conversion of rubber into thermoplastic products with properties similar to gutta-percha, balata, and shellac. I. Methods of preparation and general properties. H. L. Fisher. II. Chemistry of the reaction. H. L. Fisher and E. M. McCollm. *Ind. Eng. Chem.*, December 1, pp. 1325-1328, 1328-1333. By heating rubber in sheet form with an organic sulphonyl chloride or sulphonic acid for several hours at 125-135° C., the rubber is converted into products resembling gutta-percha and balata; if the rubber is in bulk form the product resembles shellac.
- WOOD PRESERVATION.—Experiments in wood preservation. V. Weathering tests on treated wood. L. P. Curtin, B. L. Kline, and W. Thordarson. *Ind. Eng. Chem.*, December 1, pp. 1340-1343.

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- ADSORPTION.—The valuation of adsorbents. W. Bachmann and L. Maier. *Z. anorg. Chem.*, Vol. 168, Part 1, November 21, pp. 61-72.
- ANALYSIS.—The determination of the iodine value in an aqueous emulsion. Critical consideration of the work of Fialkow. B. M. Margosches and K. Fuchs. *Z. anal. Chem.*, Vol. 72, Part 5, pp. 185-187.
- The separation and determination of tin in the analysis of stannates by decomposition of the latter in a stream of hydrogen chloride. G. Jander and F. Busch. *Berichte*, December 7, pp. 2594-2597.
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- GENERAL.—The applicability of volcanic ashes for the preparation of hydraulic mortar. H. and W. Brintzinger. *Z. anorg. Chem.*, Vol. 168, Part 1, November 21, pp. 93-95.
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- The interpretation of acetyl value, and the re-esterification of glycerides with acetic anhydride. II. D. Holde and W. Bleyberg. *Berichte*, December 7, pp. 2497-2507.
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- The acceleration of the indigo-reduction by pyridine. A. Binz and G. Prange. *Z. angewandte Chem.*, December 8, pp. 1474-1476.
- TAR.—The blue oil of lignite generator-tar and its relation to the azules and the sesquiterpenes of camomile oil. S. Ruhemann and K. Lewy. *Berichte*, December 7, pp. 2459-2469.

French

- ORGANIC.—The transformation of phenols and hydrocarbons in the presence of catalysts and hydrogen under pressure. A. Kling and D. Florentin. *Bull. Soc. Chim. de France*, October, pp. 1341-1350.
- The constitution of Grignard's organo-magnesium compounds. I. The action of water and hydrogen sulphide on asymmetric organo-magnesium compounds. M. L. Kierzek. *Bull. Soc. Chim. de France*, October, pp. 1299-1307.

Patent Literature

The following information is prepared from published Patent Specifications and from the Illustrated Official Journal (Patents) by permission of the Controller to H.M. Stationery Office. Printed copies of full Patent Specifications accepted may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at 1s. each.

Abstracts of Complete Specifications

280,613. ORGANIC COMPOUNDS OF ARSENIC, MANUFACTURE OF. G. Newbery, Stanmer, Blake's Lane, New Malden, Surrey; and May and Baker, Ltd., Garden Wharf, Church Road, Battersea, London, S.W.11. Application date, July 8, 1926.

Aromatic arsenic acids, arsenious oxides, arsine halides, and arseno compounds containing a 1:4-isoxazine ring, particularly 1:4-benzisoxazine ring, are obtained by reducing an arylarsinic acid containing a nitro group and an oxyacetic acid group in adjacent positions in the aryl nucleus. The arylarsinic acid is treated under mild reduction conditions so as to attack only the nitro group and thus form the isoxazine ring. The isoxazine derivative thus obtained may be purified and then reduced again to obtain an arseno compound. Alternatively, the intermediate isoxazine derivative need not be isolated. Examples are given of the production of 3-hydroxy-1:4-benzisoxazine-6-arsinic acid, which may be converted into 6:6'-arseno-bis-(3-hydroxy-1:4-benzisoxazine). Other compounds are also described.

280,637. DYE STUFFS OF THE ANTHRACENE SERIES, MANUFACTURE OF. W. Carpmal, London. From I.G. Farbenindustrie, Akt.-Ges., Frankfurt-on-Main, Germany. Application date, August 17, 1926.

It is known that by treating *p*-halogen-oxy-anthraquinone sulphononic acid with ammonia in the presence of copper or copper compounds the halogen atoms are replaced by amino groups. Further, the halogen-amino-anthraquinone sulphononic acids (obtained by treating hetero-nuclear α -amino-anthraquinone sulphononic acid with halogen) may be treated with amines in the presence of copper to replace the halogen atoms by amino groups. In this invention, amido compounds are obtained from 1-amido-4-halogen-2-anthraquinone sulphononic acids in a similar manner to that of the hetero-nuclear substituted amino-halogen-sulphononic acids by replacing the halogen atoms by alkyl or aralkyl amino groups in the presence of copper or copper compounds. Examples are given.

280,639. COAGULATION OF RUBBER LATEX. H. E. Potts, Liverpool. From R. Koepf and Co., Oestrich, Rheingau, Germany. Application date, August 18, 1926.

The object is to provide a substance which will cause the coagulation of rubber latex without the disadvantages experienced in the use of salts—i.e., separation of albumen, resinous matter, etc.—simultaneously with the rubber, and equal in efficiency to acetic acid without the disadvantage of the transport of a liquid acid to the rubber plantation. It is found that the required properties are possessed by sodium biformate, which is a dry solid salt, and is used in the form of a 0.3–1 per cent. solution in water. The coagulated rubber is of high quality.

280,652. BLACK AND GREY VAT DYES, MANUFACTURE OF. British Dyestuffs Corporation, Ltd., Hexagon House, Blackley, Manchester; A. Shepherdson and S. Thornley, Crumpsall Vale Chemical Works, Blackley, Manchester. Application dates, August 24, 1926, and June 23, 1927.

Specifications No. 276,766–7 (see THE CHEMICAL AGE, Vol. XVII, p. 330) describe the production of vat dyestuffs by fusing benzanthrone sulphononic acid with caustic alkali and treating the product with hydroxylamine in the presence of sulphuric acid. In this invention, the benzanthrone sulphononic acids, including those of methylbenzanthrone, chloro-benzanthrone, and other substituted benzanthrone, are treated with a hydroxylamine and the product fused with caustic alkali. The sulphonation of benzanthrone may be followed by the hydroxylamine treatment without isolation of the benzanthrone sulphononic acid. The products are bluish grey to black dyes and some examples of their preparation are given.

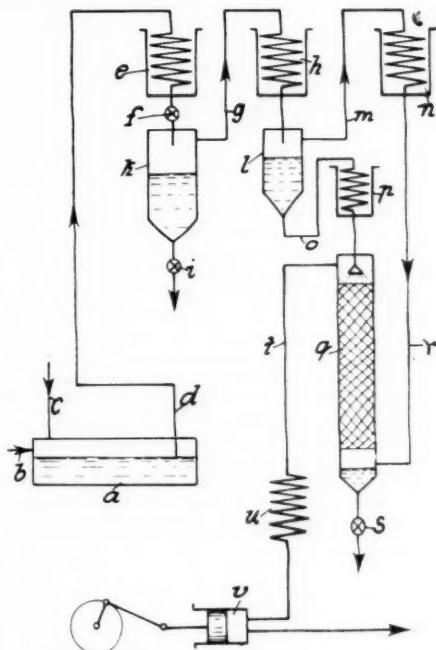
280,661. VULCANISED RUBBER AND MATERIALS FOR USE THEREIN, MANUFACTURE OF. British Dyestuffs Corporation, Ltd., Hexagon House, Blackley, Manchester; C. J. T. Cronshaw and W. J. S. Naunton, Crumpsall Vale Chemical Works, Blackley, Manchester. Application date, September 3, 1926.

It has been found that the condensation product from acetaldehyde and α -naphthylamine, and that from acetalde-

hyde and β -naphthylamine have no substantial effect on the vulcanisation of rubber or on the decrease of tensile strength of rubber vulcanised with them when heated in a current of dry air. It is now found that the condensation product from acetaldehyde and a mixture of α - and β -naphthylamine has a great effect on the ageing of rubber vulcanised with the aid of this product. It is found that the tensile strength after ageing is about double that obtained by the use of condensation products from α -naphthylamine or β -naphthylamine alone.

280,734. HYDROGENATION AND CRACKING OF HYDROCARBON COMPOUNDS. Internationale Bergin-Compagnie voor Olie-en Kolenchemie, The Hague, Holland, and A. Debo, 40, An den Morgen, Mannheim-Rheinau, Germany. Application date, January 10, 1927.

The object is to utilise the energy expended in the compression of a hydrogenating gas used for cracking coal, oil and



280,734

other hydrocarbons. Coal in the form of paste is treated with hydrogen at a pressure of 150 atmospheres in a vessel *a* and the products passed through a pipe *d* to a cooler *e* in which the temperature is reduced to 300° C. The products then pass through a valve *f* to a container *k* at 100 atmospheres pressure in which the heavy oils are collected. The light oil and water vapour passes through a pipe *g* to a second cooler *h* and receiver *l* in which the middle oils are collected. Permanent gases and benzene vapours pass through a pipe *m* to a cooler *n* and thence to a tower *q*, where they are washed with the middle oils from the tank *l*. The oil saturated with benzene is drawn off through a valve *s* and the gas is passed through a pipe *t* and heater *u* to an engine *v* in which it is expanded to atmospheric pressure.

280,712. REGENERATION OF CATALYSTS. H. G. C. Fairweather, London. From the Seldon Co., 339, Second Avenue, Pittsburg, Pa., U.S.A. Application date, November 26, 1926.

Catalysts employed in the catalytic oxidation of organic compounds, which have deteriorated in use, are regenerated by treating with halogens, non-metallic halogen compounds, non-metallic acids or anhydrides, ozone, or hydrogen peroxide, and subsequently simultaneously treated with oxygen-containing gases at a temperature of 200°–550° C. The non-metallic acids or anhydrides must be volatile below red heat.

The regenerating substance may be a gas containing sulphur dioxide or trioxide, or a gas containing oxygen or an oxidant with or without a small proportion of halogens or volatile non-metallic halogen compounds, such as hydrogen halide, ammonium halide, sulphur chloride, thionyl chloride, sulphuryl chloride, phosgene, halogen-substituted aromatic organic compounds such as chlorinated aromatic hydrocarbons, acyl halides, ethylene chloride or bromide. The sulphur dioxide gases may be replaced by the halogens or non-metallic volatile compounds, or nitric acid vapour. The catalysts regenerated by this process have a high activity. Examples are given of the treatment of a catalyst consisting of kieselguhr, silver vanadate, and potassium sulphate, which has been used in the catalytic oxidation of naphthalene to obtain phthalic anhydride. This catalyst is regenerated by mixing sulphur dioxide with the naphthalene-air mixture and then continuing the catalytic oxidation. Other examples are given of the treatment of iron vanadate, iron molybdate, nickel molybdate, ammonium vanadate, etc., employed in the catalytic oxidation of various compounds. An example is also given of the treatment of a poly-silicate catalyst of high molecular weight which is important in the oxidation of organic compounds.

280,763. WATER GAS, PHOSPHORIC ACID, AND ALUMINIUM SILICATE SLAG, PRODUCTION OF. E. Urbain, 6, Rue Lyautey, Paris. International Convention date, January 20, 1927.

In the Woelher process silica is caused to react with natural calcium triphosphate in the presence of carbonaceous matter to obtain carbon monoxide and phosphorus. The process is modified in this invention by replacing part of the silica by alumina, or alumina and clay, to obtain a fusible slag having the composition of high alumina cement. The slag should contain two parts of calcium aluminate to one part of calcium silicate. The gaseous products are carbon monoxide and phosphorus, and this is mixed with water vapour and a halogen acid in the presence of carbonaceous material to obtain phosphoric acid and render the gas suitable as fuel.

NOTE.—Abstracts of the following specifications which are now accepted appeared in THE CHEMICAL AGE when they became open to inspection under the International Convention:—257,618 (I. G. Farbenindustrie Akt.-Ges.), relating to vat dyestuffs, see Vol. XV, p. 456; 257,912 (I. G. Farbenindustrie Akt.-Ges.), relating to manufacture of liquid hydrocarbons from carbonaceous materials, see Vol. XV, p. 501; 260,605 (I. G. Farbenindustrie Akt.-Ges.), relating to alkanine esters of N-substituted ortho-amino-benzoic acid, see Vol. XVI, p. 49; 263,779 (W. Moller and W. Kreth), relating to solutions of hydrofluosilicic acid, see Vol. XVI, p. 239; 267,491 (O. Lederer, W. Stanczak and H. Kessler), relating to obtaining metal hydroxides free from iron, see Vol. XVI, p. 468; 269,546 (I. G. Farbenindustrie Akt.-Ges.), relating to recovery of sulphur from ammonium polysulphide solutions, see Vol. XVI, p. 605; 269,556 (Rubber Service Laboratories Co.), relating to acetaldehyde and acetaldehyde-amine condensation products, see Vol. XVII, p. 13; 274,108 (Soc. Italiana di Elettrochimica), relating to welding aluminium, see Vol. XVII, p. 31 (Metallurgical Section); 275,579 (Titan Co. Aktieselskabet), relating to titaniferous materials, see Vol. XVII, p. 331; 276,313 (Deutsche Gold-und Silber-Scheideanstalt vorm. Roessler), relating to alkali hydride, see Vol. XVII, p. 373.

International Specifications not yet Accepted

279,106. LEAD TETRAETHYL. H. W. Dandt, 30½, Ziegler Tract, Carney's Point, New Jersey, U.S.A. International Convention date, October 15, 1926.

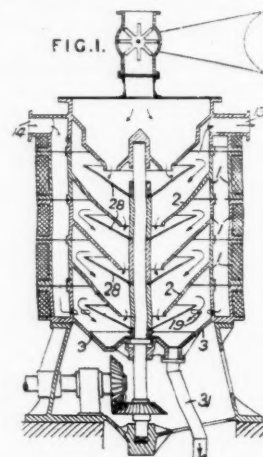
Magnesium is treated with ethyl chloride in the presence of ether, methyl iodide, and iodine. The solution of magnesium ethyl chloride is treated with lead chloride and the product poured into water. Lead tetraethyl is obtained by steam distillation.

279,128. HYDROGEN. H. Bomke, of Eisen und Stahlwerk Hoesch, Dortmund, Germany. (Assignees of Bergwerksverband zur Verwertung von Schutzrechten der Kohlentechnik Ges., Eving, Dortmund, Germany.) International Convention date, October 16, 1926.

Hydrogen is obtained from carbon monoxide and steam by means of magnesium oxide as a catalyst, with or without other catalysts or absorbents. A mixed catalyst and absorbent is obtained by calcining dolomitic limestone.

279,120. CARBONISATION APPARATUS. R. Fiege, 8, General Barbystrasse, Reinickendorf, Berlin. International Convention date, October 15, 1926.

The material in the form of powder or fine grains spreads

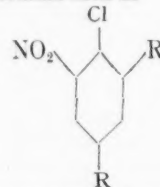


279,120

outwards in a thin layer over funnel-shaped rotating plates 28, and then on to fixed cones 2 and so on to the discharge receptacle 3. Hot gases enter at 14, pass through a casing 1, and enter the heating chamber through holes 19. Distillate is drawn off at 13.

279,133. DYES. I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, October 18, 1926.

Dyes giving yellow to reddish-brown shades on animal fibres are obtained by condensing *p*-amino-diphenylamine or a substitution product with an aromatic dinitro-halogen compound having a formula such as



in which one R represents a second nitro group, and the other

R a COOH, COO metal, COO alkyl, CON $\begin{array}{l} \text{alkyl} \\ \text{aryl} \end{array}$, SO₂O aryl,

or SO₂N $\begin{array}{l} \text{aryl} \\ \text{alkyl} \end{array}$ group. The condensation can be effected in

water, alcohol, pyridine, or nitrobenzene. Examples are given. The products are also dyes for cellulose esters and ethers.

279,134. INTERMEDIATES. I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, October 18, 1926.

The aromatic dinitro-halogen intermediate compounds referred to in 279,133 above are obtained by the interaction of a secondary aromatic amine with 1-halogen-2:4- (or 2:6) dinitro-6- (or 4) sulphonic or carboxylic halogenide. The halogenide may be prepared in situ by condensing 4-chlor-3:5-dinitrobenzoic acid and monomethyl-aniline by means of phosphorus pentachloride. Examples are given.

279,136. AROMATIC MERCAPTANS.—I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, October 18, 1926.

In an example of the production of a mercaptan of the general formula R.SH, where R is a substituted or non-substituted benzene or naphthalene residue, 5-chlor-2-amino-1-methyl-benzene is diazotised, neutralised, and run into hot sodium polysulphide solution. Sulphur which separates is removed, and the oil is reduced to the mercaptan.

279,377-8. METHANOL. Commercial solvents Corporation, Terre Haute, Ind., U.S.A. (Assignees of J. C. Woodruff, 1526, South 6th Street, Terre Haute, and G. Bloomfield, 1306, South Center Street, Terre Haute, Ind., U.S.A.). International Convention date, October 25, 1926.

279,377. Catalysts for methanol synthesis are obtained by treating nickel hydroxide, oxide, nitrate, oxalate or tartrate with hydrogen at 500°-600° C. Before reduction, the nickel compound may be mixed with an agglutinant, compressed, and dried.

279,378. This is an addition to 271,840 (See THE CHEMICAL AGE, Vol. XVII, p. 134), which describes methanol catalysts comprising one or more difficultly reducible metal oxides, one or more easily reducible metal oxides, and a metal halide. In an example, zinc oxide is added to a solution of chromium nitrate, ferric nitrate and zinc chloride, and the mixture evaporated, heated, and treated with zinc chloride solution. Other examples are given.

279,379. ORGANIC ARSENIC COMPOUNDS. Etablissements Poulenc Frères and E. Fourneau, 86, Rue Vieille du Temple, Paris. International Convention date, October 21, 1926.

Diazotised *o*-chlor-*p*-nitraniline is treated with sodium arsenite, the *o*-chlor-*p*-nitro-phenyl-arsinic acid obtained is reduced, and the product treated with chloracetamide to obtain *o*-chlor-*p*-amino-glycinamide-phenylarsinic acid.

279,401. DYES. I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, October 21, 1926. Addition to 272,924. (See THE CHEMICAL AGE, Vol. XVII, p. 201.)

These dyes are obtained by treating with an oxidising agent and then a saponifying agent 9:10-diethers of anthrahydro-quinones containing one or more β -amino or β -mono-substituted amino groups and in which at least one α -position to an amino group is occupied by hydrogen. Thus, 2-amino-anthrahydroquinone-9:10-dimethyl ether is heated with ferric chloride and the product saponified with concentrated sulphuric acid. The diethers referred to are obtained by reducing 2-amino-2-acylamino-anthraquinones, alkylating the lenco compounds, and splitting off the acyl residue.

279,406. SYNTHETIC RUBBER. J. Baer, Basle, Switzerland. International Convention date, October 20, 1926.

Methylene dichloride or dibromide, methylene iodide, ethylene dichloride or dibromide, ethylene iodide, etc., are treated with sulphur vapour in presence of alkalies to effect a polymerising action and produce an elastic substance similar to rubber. Examples are given.

279,410. *DESTRUCTIVE HYDROGENATION. A. L. H. Spilker, 71, Varzinerstrasse, Meiderich, Duisburg; C. Zerbe, 49, Varzinerstrasse, Meiderich, Duisburg; and Ges. für Teerverwertung, Meiderich, Duisburg, Germany. International Convention date, October 20, 1926. Addition to 277,974. (See THE CHEMICAL AGE, Vol. XVII, p. 496.)

Coal, coal products, and hydrocarbons are hydrogenated by the catalytic action of halogens or halogen compounds (except iodine) which may be natural mixtures obtained in the potash industry. Thus, naphthalene may be treated with hydrogen at 470° C. and 100 atmospheres pressure, in presence of ammonium chloride, yielding 70 per cent. of liquid products. Other examples are given.

279,419 and 279,420-1. CYANAMIDES. N. Caro, 8, Buda-pestherstrasse, Berlin, and A. R. Frank, 138, Kurfürstendamm, Halensee, Berlin. International Convention date, October 23, 1926.

279,419. Cyanamides other than those of alkali metals are obtained by treating calcium, magnesium, zinc, etc., carbonates with ammonia at 3-10 atmospheres pressure and at temperatures near the dissociation points of the carbonates under ordinary pressure.

279,420. The cyanamides are prepared as in 279,419 above, but using a mixture of ammonia and carbon monoxide at ordinary or increased pressure.

279,421. Ammonia is passed over calcium carbonate or dolomite heated to 500°-900° C. to obtain a fertiliser.

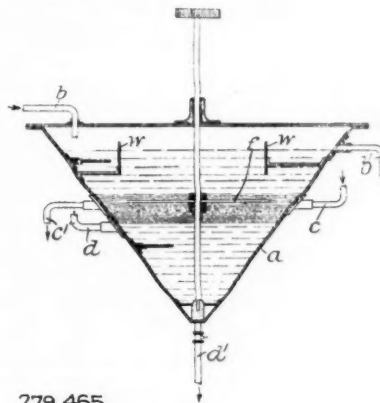
279,429 and 279,436. DYES. I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, October 22, 1926.

279,429. Monoazo dyes are obtained by coupling the diazo compounds of *o*-aminonaphthol or its diazotisable derivatives with 1-naphthol-8-sulphonic acid, giving red shades on wool. The chromium compounds are also obtained.

279,436. 3:-dichloro-2-aminotoluene is transformed by Sandmeyer's method into 3:5-dichloro-2-cyantoluene and saponified to obtain 3:5-dichlorotoluene-2-carboxylic acid, which can be converted by way of the mercapto-carboxylic acid into 4-methyl-6-chloroxythionaphthene. Examples are given.

279,465. EXTRACTING PHENOLS, PYRIDINE BASES, ETC., FROM TARRY LIQUORS. P. Franke, 14, Manfredstrasse, Essen, Germany. (Assignee of A. Weindel, 20, Bornstrasse, Essen, Germany.) International Convention date, October 21, 1926.

Tarry liquor is treated with a tar oil fraction boiling between 230° C. and 350° C. to extract tarry matter, phenols, and



pyridine bases. The tar oil may be previously freed from phenol, pyridine bases, and naphthalene. A conical tank *a* may be used, having inlet pipes *b*, *c*, *d*, and outlet pipes *b¹*, *c¹*, *d¹*. Tarry liquor is supplied at *b*, tar oil at *c*, and soda lye at *d*, so that three layers are formed. A stirrer *f* causes the phenols to pass from the liquor to the oil, and from the oil to the soda solution. The oil is drawn off continuously or intermittently for treatment with acid to recover the pyridine bases, or it may be treated by vacuum distillation.

LATEST NOTIFICATIONS.

281,993. Process for the production of artificial materials and/or articles made therefrom, from the condensation products of urea with formaldehyde or substances yielding formaldehyde. Dr. F. Schmidt. December 8, 1926.

282,001. Para'-amino-orthobenzoyl-benzoic acid, and a process of making the same. Newport Co. December 8, 1926.

282,004. Manufacture of anthraquinone derivatives. I.G. Farbenindustrie Akt.-Ges. December 9, 1926.

282,011. Process for treating rubber latex. Naugatuck Chemical Co. December 9, 1926.

282,023. Process of dissociating zirconium ores. Rhenania-Kunheim Verein Chemischer Fabriken Akt.-Ges. December 13, 1926.

282,025. Roll-films. I.G. Farbenindustrie Akt.-Ges. December 10, 1926.

282,049. Process for producing carbon disulphide. I.G. Farbenindustrie Akt.-Ges. December 13, 1926.

282,083. Manufacture of primary amines. Fabriques de Produits de Chimie Organique de Laire. December 9, 1926.

282,111. Manufacture of arylaminonaphthalene-derivatives. I.G. Farbenindustrie Akt.-Ges. December 13, 1926.

282,112. Manufacture of finely-porous metals. I.G. Farbenindustrie Akt.-Ges. December 13, 1926.

Specifications Accepted, with Date of Application

254,284. Metallurgy of tin. D. M. S. R., and S. Guggenheim, J. K. Macgowan and E. A. C. Smith (trading as Guggenheim Bros.). June 27, 1925.

258,910. Bz-2-hydroxybenzanthrone, Process for preparing. I.G. Farbenindustrie Akt.-Ges. Sept. 28, 1925. Addition to 224,522.

- 259,554. Electrolytic preparation of magnesium and metals of the alkaline earths, Process and apparatus for. A. C. Jessup. October 9, 1925.
- 261,423. Dyeing cellulose esters, Process for. Soc. of Chemical Industry in Basle. November 14, 1925.
- 261,748. Products resembling rubber, Manufacture of. Consortium für Elektro-Chemische Industrie Ges. November 23, 1925.
- 263,862. Hydro-cycloacoutchouc, Manufacture of. H. Staudinger. December 31, 1925.
- 274,902. Derivatives of acenaphthene, Manufacture of. I.G. Farbenindustrie Akt.-Ges. July 24, 1926.
- 275,922. Unsymmetrically substituted diamino propanols, Manufacture of. I.G. Farbenindustrie Akt.-Ges. August 3, 1926.
- 276,012. 1-amino-3-dialkylamino-2-propanols, Manufacture of. I.G. Farbenindustrie Akt.-Ges. August 13, 1926.
- 277,619 and 281,547. Sulphuric acid from the acid tar of benzol purification, Process for recovering. C. Still. September 20 and December 22, 1926. 281,547 addition to 277,619.
- 281,357. Coating iron articles with tin and zinc, Process for. T. Liban. July 20, 1926.
- 281,390. Separation or extraction of liquids from materials, Process and apparatus for. Illingworth Carbonisation Co., Ltd., and S. R. Illingworth. September 1, 1926.
- 281,410. Dyeing with azo dyes. British Dyestuffs Corporation, Ltd., J. Baddiley, P. Chorley, and R. Brightman. September 7, 1926.
- 281,459. Composite titanium pigments, Manufacture of. H. Wade. (Titanium Pigment Co., Inc.). November 9, 1926.
- 281,465. Saturators for manufacture of crystalline salts. E. M. Weyman and R. P. Wallis. November 18, 1926.
- 281,474. Coal gas and the like, Treatment of, and the production of ammonium sulphate. C. Cooper, F. B. Holmes, and W. C. Holmes and Co., Ltd. November 30, 1926.
- 281,491. Anhydrous chlorides and hydrogen chloride, Manufacture and production of. J. Y. Johnson. (I.G. Farbenindustrie Akt.-Ges.). January 7, 1927.
- 281,510. Sulphuric acid, Manufacture of. A. Sharp (Soc. Generale Metallurgique de Hoboken). February 19, 1927.
- 281,530. Material containing thymol and polymerised formaldehyde, Process for the production of. A. Abraham. April 19, 1927.
- 281,551. Sulphuric acid, Manufacture of. H. Petersen. June 7, 1927.
- 281,582. Therapeutic substances, Preparation of. Wellcome Foundation, Ltd., T. A. Henry, and T. M. Sharp. August 16, 1927.
- I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Conversion of hydrocarbons. 33,850. December 14.
- I.G. Farbenindustrie Akt.-Ges. and Imray, O. Y. Manufacture of 2:3-aminonaphthol, etc. 33,992. December 15.
- I.G. Farbenindustrie Akt.-Ges. and Imray, O. Y. Manufacture of ortho-aminodiaryl ethers. 33,993. December 15.
- I.G. Farbenindustrie Akt.-Ges. and Imray, O. Y. Manufacture of alkali metal salts. 33,994. December 15.
- I.G. Farbenindustrie Akt.-Ges. and Imray, O. Y. Manufacture of azo dyestuffs. 34,116. December 16.
- I.G. Farbenindustrie Akt.-Ges. and Imray, O. Y. Manufacture of oxydiarylketones. 34,117. December 16.
- I.G. Farbenindustrie Akt.-Ges. and Imray, O. Y. Oxidation of hydrocarbons. 34,227. December 17.
- I.G. Farbenindustrie Akt.-Ges. Manufacture of hydrocarbons poor in hydrogen. 33,562. December 12. (Germany, January 3.)
- I.G. Farbenindustrie Akt.-Ges. Manufacture of azo dyestuffs. 33,619. December 12. (Germany, December 13, 1926.)
- I.G. Farbenindustrie Akt.-Ges. Manufacture of 6-alkoxyl-8-amino-quinolines. 33,620. December 12.
- I.G. Farbenindustrie Akt.-Ges. Manufacture of arylaminonaphthalene derivatives. 33,719. December 13. (Germany, December 13, 1926.)
- I.G. Farbenindustrie Akt.-Ges. Manufacture of porous metals. 33,721. December 13. (Germany, December 13, 1926.)
- I.G. Farbenindustrie Akt.-Ges. Manufacture of dyestuffs. 33,870. December 14. (Germany, December 14, 1926.)
- I.G. Farbenindustrie Akt.-Ges. Manufacture of metal catalysts. 33,871. December 14. (Germany, December 14, 1926.)
- I.G. Farbenindustrie Akt.-Ges. Production of vat dyestuffs. 34,226. December 17.
- Imperial Chemical Industries, Ltd. Fertilisers and manufacture thereof. 33,655. December 13.
- Sandoz Chemical Co., Ltd. Dyeing cotton materials. 34,261. December 17.
- Schering-Kahlbaum Akt.-Ges. Process for manufacture of alkyl- β -halogen-ethyl ketones. 33,881. December 14. (Germany, December 15, 1926.)
- Schering-Kahlbaum Akt.-Ges. Manufacture of metal, etc., mercapto acid esters. 34,051. December 15. (Germany, December 16, 1926.)
- Soc. Générale Métallurgique de Hoboken. Manufacture of sulphuric acid. 34,039. December 15. (Germany, February 23.)
- Soc. Générale Métallurgique de Hoboken. Manufacture of sulphuric acid. 34,081. December 16. (France, January 24.)

Applications for Patents

- Bakelite, Ges. Production of phenol-aldehyde condensation products. 33,897. December 14. (Germany, December 14, 1926.)
- Boedecker, F. Process for preparation of monoalkyl ethers. 33,971. December 15.
- British Celanese, Ltd., and Ellis, G. H. Manufacture of dyestuffs. 33,683. December 13.
- British Celanese, Ltd., and Ellis, G. H. Knitting machines. 33,684. December 13.
- British Celanese, Ltd., and Ellis, G. H. Apparatus for manufacture of artificial silk. 34,223. December 17.
- Carpmael, A., and I.G. Farbenindustrie Akt.-Ges. Manufacture of compounds containing sulphur. 33,621. December 12.
- Carpmael, A., and I.G. Farbenindustrie Akt.-Ges. Dyeing cellulose derivatives. 33,703. December 13.
- Carpmael, A., and I.G. Farbenindustrie Akt.-Ges. Manufacture of dyestuffs. 33,704. December 13.
- Carpmael, A., and I.G. Farbenindustrie Akt.-Ges. Stuffing leather. 33,705. December 13.
- Carpmael, A., and I.G. Farbenindustrie Akt.-Ges. Manufacture of water soluble products. 33,706. December 13.
- Carpmael, A., and I.G. Farbenindustrie Akt.-Ges. Manufacture of solutions for dyeing. 33,707. December 13.
- Carpmael, A., and I.G. Farbenindustrie Akt.-Ges. Manufacture of cyanides. 33,708. December 13.
- Crood, A. K., and Hanovia Chemical and Manufacturing Co. Process for removal of cupric oxide. 33,828. December 14.
- Crood, A. K., and Hanovia Chemical and Manufacturing Co. Production of crystalline cuprous oxide upon copper surfaces. 33,830. December 14.
- Crood, A. K., and Hanovia Chemical and Manufacturing Co. Securing electrical contact with crystalline cuprous oxide. 33,831. December 14.
- Erba Akt.-Ges. Manufacture of Turkey-red oils, etc. 33,976. December 15. (Germany, July 28.)
- Erba Akt.-Ges. Manufacture of highly-sulphonated oils. 33,977. December 15. (Germany, June 23.)
- I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of 4-halogen-2-benzoylbenzoic acid, etc. 33,848. December 14.
- I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production of olefines, etc. 33,849. December 14.

Celanese Appeal against Brussels Judgment

DR. HENRI DREYFUS, on behalf of the Dreyfus-Clavel group, has announced his intention to appeal against the recent decision of the Belgian Court of Arbitration which upheld the right of the Belgium Tubize Co. to use certain Celanese processes in Belgium and certain other European countries, states the *Financial News*. In his statement, Dr. Dreyfus says that his group "have been waiting for over two months for an official notification regarding the judgment," and also that his group is not in a position to take further legal steps until the decision has been legally notified, and that only from the date of such notification can commence the three months' period during which the appeal may be made to the competent Courts. He states that the group is determined to fight the case, and other new cases, to their logical conclusion. The statement concludes that the Dreyfus-Clavel group do not accept the Arbitration decision as being final and binding upon them.

British Cement Products: Increase of Capital

SEPARATE general meetings of the holders of ordinary shares and the holders of deferred shares and an extraordinary general meeting of the British Cement Products and Finance Co., Ltd., were held on Wednesday, in London, to consider resolutions increasing the capital of the company to £500,000 by the creation of 285,000 new ordinary shares of £1 each and 300,000 new deferred shares of 1s. each. The resolutions were unanimously approved at each meeting.

THE RUSSIAN SOVIET GOVERNMENT has found it desirable to engage the services of foreign experts in connection with the constructional work which is proceeding in Soviet Russia. On June 1 of this year, 211 foreign experts were at work in Russian industries, mostly in the metallurgical, electro-technical and chemical industries. It is proposed to invite a further 137 foreign experts as advisers to the U.S.S.R., in various branches of industry.

Weekly Prices of British Chemical Products

The prices and comments given below respecting British chemical products are based on direct information supplied by the British manufacturers concerned. Unless otherwise qualified, the figures quoted apply to fair quantities, net and naked at makers' works.

General Heavy Chemicals

ACID ACETIC, 40% TECH.—£19 per ton.
 ACID BORIC, COMMERCIAL.—Crystal, £30 per ton; powder, £32 per ton; extra fine powder, £34 per ton.
 ACID HYDROCHLORIC.—3s. 9d. to 6s. per carboy d/d, according to purity strength, and locality.
 ACID NITRIC, 80° Tw.—£21 10s. to £27 per ton, makers' works, according to district and quality.
 ACID SULPHURIC.—Average National prices f.o.r. makers' works, with slight variations up and down owing to local considerations; 140° Tw., Crude Acid, 60s. per ton. 168° Tw., Arsenical, £5 10s. per ton. 168° Tw., Non-arsenical, £6 15s. per ton.
 AMMONIA ALKALI.—£6 15s. per ton f.o.r. Special terms for contracts.
 BISULPHITE OF LIME.—£7 10s. per ton, f.o.r. London, packages extra.
 BLEACHING POWDER.—Spot, £9 10s. per ton d/d; Contract, £8 10s. per ton d/d, 4-ton lots.
 BORAX, COMMERCIAL.—Crystals, £19 10s. to £20 per ton; granulated, £19 per ton; powder, £21 per ton. (Packed in 2-cwt. bags, carriage paid any station in Great Britain.)
 CALCIUM CHLORIDE (SOLID).—£5 to £5 5s. per ton d/d carr. paid.
 COPPER SULPHATE.—£25 to £25 10s. per ton.
 METHYLATED SPIRIT 61 O.P.—Industrial, 2s. 5d. to 2s. 10d. per gall.; pyridinised industrial, 2s. 7d. to 3s. per gall.; mineralised, 3s. 6d. to 3s. 10d. per gall.; 64 O.P., 1d. extra in all cases; prices according to quantity.
 NICKEL SULPHATE.—£38 per ton d/d.
 NICKEL AMMONIA SULPHATE.—£38 per ton d/d.
 POTASH CAUSTIC.—£30 to £33 per ton.
 POTASSIUM BICHROMATE.—4½d. per lb.
 POTASSIUM CHLORATE.—3½d. per lb., ex wharf, London, in cwt. kegs.
 SALAMMONIAC.—£45 to £50 per ton d/d. Chloride of ammonia £37 to £45 per ton, carr. paid.
 SALT CAKE.—£3 15s. to £4 per ton d/d. In bulk.
 SODA CAUSTIC, SOLID.—Spot lots delivered, £15 2s. 6d. to £18 per ton, according to strength; 20s. less for contracts.
 SODA CRYSTALS.—£5 to £5 5s. per ton, ex railway depots or ports.
 SODIUM ACETATE 97.98%.—£21 per ton.
 SODIUM BICARBONATE.—£10 10s. per ton, carr. paid.
 SODIUM BICHROMATE.—3½d. per lb.
 SODIUM BISULPHITE POWDER, 60.62%.—£17 10s. per ton delivered for home market, 1-cwt. drums included; £15 10s. f.o.r. London.
 SODIUM CHLORATE.—2½d. per lb.
 SODIUM NITRITE, 100% BASIS.—£27 per ton d/d.
 SODIUM PHOSPHATE.—£14 per ton, f.o.b. London, casks free.
 SODIUM SULPHATE (GLAUBER SALTS).—£13 12s. 6d. per ton.
 SODIUM SULPHIDE CONC. SOLID, 60.65%.—£13 5s. per ton d/d. Contract, £13. Carr. paid.
 SODIUM SULPHIDE CRYSTALS.—Spot, £8 12s. 6d. per ton d/d. Contract, £8 10s. Carr. paid.
 SODIUM SULPHITE, PEA CRYSTALS.—£14 per ton f.o.b. London, 1-cwt. kegs included.

Coal Tar Products

ACID CARBOLIC CRYSTALS.—7½d. to 7¾d. per lb. Crude 60's, 2s. 5d. per gall. prompt; lower for 1928 delivery.
 ACID CRESYLIC 99/100.—2s. 11d. to 3s. per gall. 97.99.—2s. 4d. to 2s. 5½d. per gall. Pale, 95%.—2s. 3d. to 2s. 4d. per gall. Dark, 95%.—2s. 1d. to 2s. 2d.
 ANTHRACENE.—A quality, 2½d. per unit. 40%.—£5 per ton.
 ANTHRACENE OIL, STRAINED.—8d. to 8½d. per gall. Unstrained, 7¾d. to 8d. per gall.
 BENZOLE.—Crude 65's, 9½d. to 9¾d. per gall., ex works in tank wagons. Standard Motor, 1s. 1½d. to 1s. 2½d. per gall., ex works in tank wagons. Pure, 1s. 5d. to 1s. 7d. per gall., ex works in tank wagons.
 TOLUOLE.—90%.—1s. 4d. to 1s. 8d. per gall. Firm. Pure, 1s. 10d. to 2s. per gall.
 XYLOL.—1s. 3d. to 1s. 10d. per gall. Pure, 1s. 9d. per gall.
 CREOSOTE.—Cresylic, 20/24%.—10d. to 11d. per gall.; middle oil, 13d. to 9d. per gall. Heavy, 8¾d. to 9d. per gall. Standard specification, 7½d. to 7¾d. ex works. Salty, 7d. per gall., less 1½%.
 NAPHTHA.—Crude, 9d. to 10d. per gall. Solvent 90/160, 9½d. to 10½d. per gall. Solvent 95/160, 1s. 3d. to 1s. 4d. per gall. Solvent 90/190, 8½d. to 1s. 3d. per gall.
 NAPHTHALENE CRUDE.—Drained Creosote Salts, £5 per ton. Whizzed or hot pressed, £8 per ton.
 NAPHTHALENE.—Crystals, £13 to £13 10s. per ton. Quiet. Flaked, £14 to £15 per ton, according to districts.
 PITCH.—Medium soft, 85s. to 90s. per ton, f.o.b., according to district. Market firm.
 PYRIDINE.—90/140, 5s. 6d. to 6s. 6d. per gall. 90/180, 3s. 6d. to 5s. per gall. Heavy, 3s. to 3s. 6d. per gall.

Intermediates and Dyes

In the following list of Intermediates delivered prices include packages except where otherwise stated:
 ACID AMIDONAPHTHOL DISULPHO (1-8-2-4).—10s. 9d. per lb.
 ACID ANTHRANILIC.—6s. per lb. 100%.
 ACID BENZOIC.—1s. 9d. per lb.
 ACID GAMMA.—4s. 6d. per lb.
 ACID H.—3s. per lb.
 ACID NAPHTHIONIC.—1s. 6d. per lb.
 ACID NEVILLE AND WINTHER.—4s. 9d. per lb.
 ACID SULPHANILIC.—8½d. per lb.
 ANILINE OIL.—8d. per lb. naked at works.
 ANILINE SALTS.—8d. per lb. naked at works.
 BENZALDEHYDE.—2s. 3d. per lb.
 BENZIDINE BASE.—3s. 3d. per lb. 100% basis d/d.
 BENZOIC ACID.—1s. 8½d. per lb.
 o-CRESOL 29/31° C.—5½d. per lb.
 m-CRESOL 98/100%.—2s. 3d. to 2s. 5d. per lb.
 p-CRESOL 32/34° C.—2s. 3d. to 2s. 5d. per lb.
 DICHLORANILINE.—1s. 10d. per lb.
 DIMETHYLANILINE.—1s. 11d. per lb.
 DINITROBENZENE.—8½d. per lb. naked at works. £75 per ton.
 DINITROCHLOROBENZENE.—£84 per ton d/d.
 DINITROTOLUENE.—48/50° C. 8d. per lb. naked at works. 66/68° C. 9d. per lb. naked at works.
 DIPHENYLAMINE.—2s. 10d. per lb. d/d.
 a-NAPHTHOL.—2s. per lb. d/d.
 B-NAPHTHOL.—10d. per lb. d/d.
 a-NAPHTHYLAMINE.—1s. 3d. per lb.
 B-NAPHTHYLAMINE.—3s. per lb.
 o-NITRANILINE.—5s. 9d. per lb.
 m-NITRANILINE.—3s. per lb. d/d.
 p-NITRANILINE.—1s. 8d. per lb.
 NITROBENZENE.—6d. per lb. naked at works.
 NITRONAPHTHALENE.—1s. 3d. per lb.
 R. SALT.—2s. 2d. per lb.
 SODIUM NAPHTHIONATE.—1s. 8½d. per lb. 100% basis d/d.
 o-TOLUIDINE.—8½d. per lb.
 p-TOLUIDINE.—2s. per lb. naked at works.
 m-XYLIDINE ACETATE.—2s. 11d. per lb. 100%.
 N. W. ACID.—4s. 9d. per lb. 100%.

Wood Distillation Products

ACETATE OF LIME.—Brown, £10 5s. per ton. Good demand.
 Grey, £14 10s. to £15 per ton. Liquor, 9d. per gall.
 CHARCOAL.—£6 to £9 per ton, according to grade and locality. Foreign competition severe.
 IRON LIQUOR.—1s. 3d. per gall, 32° Tw. 1s. per gall. 24° Tw.
 RED LIQUOR.—9d. to 10d. per gall.
 WOOD CREOSOTE.—1s. 9d. per gall. Unrefined.
 WOOD NAPHTHA, MISCIBLE.—3s. 11d. to 4s. 3d. per gall. Solvent, 4s. 3d. per gall.
 WOOD TAR.—£4 to £5 per ton.
 BROWN SUGAR OF LEAD.—£40 15s. per ton.

Rubber Chemicals

ANTIMONY SULPHIDE.—Golden, 6½d. to 1s. 5½d. per lb., according to quality; Crimson, 1s. 4d. to 1s. 6d. per lb., according to quality.
 ARSENIC SULPHIDE, YELLOW.—1s. 9d. per lb.
 BARYTES.—£3 10s. to £6 15s. per ton, according to quality.
 CADMIUM SULPHIDE.—2s. 6d. to 2s. 9d. per lb.
 CARBON BISULPHIDE.—£20 to £25 per ton, according to quantity.
 CARBON BLACK.—5½d. per lb., ex wharf.
 CARBON TETRACHLORIDE.—£45 to £50 per ton, according to quantity, drums extra.
 CHROMIUM OXIDE, GREEN.—1s. 1d. per lb.
 DIPHENYLGUANIDINE.—3d. 9d. per lb.
 INDIARUBBER SUBSTITUTES, WHITE AND DARK.—5½d. to 6½d. per lb.
 LAMP BLACK.—£35 per ton, barrels free.
 LEAD HYPOSULPHITE.—9d. per lb.
 LITHOPHANE, 30%.—£22 10s. per ton.
 MINERAL RUBBER "RUBPRON".—£13 12s. 6d. per ton, f.o.r. London.
 SULPHUR.—£9 to £11 per ton, according to quality.
 SULPHUR CHLORIDE.—4d. to 7d. per lb., carboys extra.
 SULPHUR PRECIP. B.P.—£47 10s. to £50 per ton.
 THIOCARBAMIDE.—2s. 6d. to 2s. 9d. per lb., carriage paid.
 THIOCARBANILIDE.—2s. 1d. to 2s. 3d. per lb.
 VERMILION, PALE OR DEEP.—6s. to 6s. 3d. per lb.
 ZINC SULPHIDE.—1s. per lb.

Pharmaceutical and Photographic Chemicals

ACID, ACETIC, PURE, 80%.—£39 per ton ex wharf London in glass containers.
 ACID, ACETYL SALICYLIC.—2s. 3½d. to 2s. 5d. per lb.

- ACID, BENZOIC, B.P.—2s. to 3s. 3d. per lb., according to quantity. Solely ex Gum, 1s. to 1s. 3d. per oz., according to quantity.
- ACID, BORIC B.P.—Crystal, 36s. to 39s. per cwt.; powder, 40s. to 43s. per cwt.; extra fine powder, 42s. per cwt., according to quantity. Carriage paid any station in Great Britain, in ton lots.
- ACID, CAMPHORIC.—19s. to 21s. per lb.
- ACID, CITRIC.—1s. 6½d. to 1s. 7d. per lb., less 5%.
- ACID, GALLIC.—2s. 8d. per lb. for pure crystal, in cwt. lots.
- ACID, PYROGALLIC, CRYSTALS.—7s. 3d. per lb. Resublimed, 8s. 3d. per lb.
- ACID, SALICYLIC, B.P. PULV.—1s. 2½d. to 1s. 3½d. per lb.; Technical.—11½d. to 11¾d. per lb.
- ACID, TANNIC B.P.—2s. 8d. to 2s. 10d. per lb.
- ACID, TARTARIC.—1s. 3½d. per lb., less 5%.
- ACETANILIDE.—1s. 6d. to 1s. 9d. per lb. for quantities.
- AMIDOL.—7s. 6d. to 9s. per lb., d/d.
- AMIDOPYRIN.—8s. to 8s. 3d. per lb.
- AMMONIUM BENZOATE.—3s. 3d. to 3s. 6d. per lb., according to quantity.
- AMMONIUM CARBONATE B.P.—£37 per ton. Powder, £39 per ton in 5 cwt. casks. Resublimed, 1s. per lb.
- ATROPINE SULPHATE.—9s. per oz.
- BARBITONE.—5s. 9d. to 6s. per lb.
- BENZONAPHTHOL.—3s. 3d. per lb. spot.
- BISMUTH CARBONATE.—10s. 4d. to 10s. 7d. per lb.
- BISMUTH CITRATE.—9s. 10d. to 10s. 1d. per lb.
- BISMUTH SALICYLATE.—8s. 10d. to 10s. 1d. per lb.
- BISMUTH SUBNITRATE.—8s. 4d. to 8s. 7d. per lb.
- BISMUTH NITRATE.—6s. 1d. to 6s. 4d. per lb.
- BISMUTH OXIDE.—13s. 10d. to 14s. 1d. per lb.
- BISMUTH SUBCHLORIDE.—13s. 10d. to 14s. 1d. per lb.
- BISMUTH SUBGALLATE.—8s. 1d. to 8s. 4d. per lb. Extra and reduced prices for smaller and larger quantities respectively; Liquor Bismuthi et Ammon. Cit. B.P. in W. Qts. 1s. 1d. per lb.; 12 W. Qts. 1s. per lb.; 36 W. Qts., 11½d. per lb.
- BORAX B.P.—Crystal, 25s. per cwt.; powder, 26s. per cwt., according to quantity. Carriage paid any station in Great Britain, in ton lots.
- BROMIDES.—Ammonium, 1s. 11d. to 2s. 1d. per lb.; potassium, 1s. 7½d. to 1s. 9½d. per lb.; sodium, 1s. 10d. to 2s. per lb.; granulated, ½d. per lb. less; all spot. Large quantities at lower rates.
- CALCIUM LACTATE.—1s. 2½d. to 1s. 3½d. per lb.
- CAMPOR.—Refined flowers, 2s. 11d. to 3s. 1d. per lb., according to quantity; also special contract prices.
- CHLORAL HYDRATE.—3s. 2d. to 3s. 4d. per lb.
- CHLOROFORM.—2s. 3d. to 2s. 7½d. per lb., according to quantity.
- CREOSOTE CARBONATE.—6s. per lb.
- ETHERS.—S.G. 730—1s. 1½d. to 10½d., drums; other gravities at proportionate prices.
- FORMALDEHYDE.—£39 per ton, in barrels ex wharf.
- GUAIACOL CARBONATE.—4s. 9d. to 5s. per lb.
- HEXAMINE.—2s. 3d. to 2s. 6d. per lb.
- HOMATROPINE HYDROBROMIDE.—30s. per oz.
- HYDRASTINE HYDROCHLORIDE.—English make offered at 120s. per oz.
- HYDROGEN PEROXIDE (12 VOLS.).—1s. 4d. per gallon, f.o.r. makers' works, naked. Winchesters, 2s. 11d. per gall. B.P., 10 vols., 2s. to 2s. 3d. per gall.; 20 vols., 3s. to 4s. per gall.
- HYDROQUINONE.—3s. per lb., in cwt. lots.
- HYPOPHOSPHITES.—Calcium, 3s. 6d. per lb., for 28-lb. lots; potassium, 4s. 1d. per lb.; sodium, 4s. per lb.
- IRON AMMONIUM CITRATE.—B.P., 2s. 1d. to 2s. 4d. per lb. Green, 2s. 4d. to 2s. 9d. per lb.; U.S.P., 2s. 2d. to 2s. 5d. per lb.
- IRON PERCHLORIDE.—18s. to 20s. per cwt., according to quantity.
- MAGNESIUM CARBONATE.—Light commercial, £31 per ton net.
- MAGNESIUM OXIDE.—Light commercial, £62 10s. per ton, less 2½%; Heavy commercial, £21 per ton, less 2½%; in quantity lower; Heavy Pure, 2s. to 2s. 3d. per lb., in 1 cwt. lots.
- MENTHOL.—A.B.R. recrystallised B.P., 15s. 6d. per lb. net for January delivery; Synthetic detached crystals, 9s. to 12s. 6d. per lb., according to quantity; Liquid (95%), 11s. 3d. per lb.
- MERCURIALS B.P.—Up to 1 cwt. lots, Red Oxide, 7s. 6d. to 7s. 7d. per lb., levig., 7s. to 7s. 1d. per lb.; Corrosive Sublimate, Lump, 5s. 9d. to 5s. 10d. per lb., Powder, 5s. 2d. to 5s. 3d. per lb.; White Precipitate, Lump, 5s. 11d. to 6s. per lb., Powder, 6s. to 6s. 1d. per lb., Extra Fine, 6s. 1d. to 6s. 2d. per lb.; Calomel, 6s. 4d. to 6s. 5d. per lb.; Yellow Oxide, 6s. 10d. to 6s. 11d. per lb.; Persulph., B.P.C., 6s. 1d. to 6s. 2d. per lb.; Sulph. nig., 5s. 10s. to 5s. 11d. per lb. Special prices for larger quantities.
- METHYL SALICYLATE.—1s. 9d. per lb.
- METHYL SULPHONAL.—9s. to 9s. 3d. per lb.
- METOL.—9s. to 11s. 6d. per lb. British make.
- PARAFORMALDEHYDE.—1s. 9d. per lb. for 100% powder.
- PARALDEHYDE.—1s. 4d. per lb. Less in quantity.
- PHENACETIN.—2s. 6d. to 2s. 9d. per lb.
- PHENAZONE.—4s. to 4s. 3d. per lb.
- PHENOLPHTHALEIN.—6s. 6d. to 6s. 9d. per lb.
- POTASSIUM BITARTRATE 99/100% (Cream of Tartar).—96s. per cwt., less 2½ per cent.
- POTASSIUM CITRATE.—B.P.C., 1911, 1s. 8d. to 1s. 11d. per lb.; U.S.P., 1s. 11d. to 2s. 2d. per lb.
- POTASSIUM FERRICYANIDE.—1s. 9d. per lb., in cwt. lots.
- POTASSIUM IODIDE.—16s. 8d. to 17s. 2d. per lb., according to quantity.
- POTASSIUM METABISULPHITE.—6d. per lb., 1-cwt. kegs included, f.o.r. London.
- POTASSIUM PERMANGANATE.—B.P. crystals, 5½d. per lb., spot.
- QUININE SULPHATE.—1s. 8d. to 1s. 9d. per oz., bulk in 100 oz. tins.
- RESORCIN.—2s. 10d. to 3s. per lb., spot.
- SACCHARIN.—55s. per lb.; in quantity lower.
- SALOL.—2s. 4d. per lb.
- SODIUM BENZOATE, B.P.—1s. 8d. to 1s. 11d. per lb.
- SODIUM CITRATE, B.P.C., 1911.—1s. 8d. to 1s. 11d. per lb., B.P.C., 1923—2s. to 2s. 1d. per lb. for 1-cwt. lots. U.S.P., 1s. 11d. to 2s. 2d. per lb., according to quantity.
- SODIUM FERROCYANIDE.—4d. per lb., carriage paid.
- SODIUM HYPOSULPHITE, PHOTOGRAPHIC.—£15 5s. per ton, d/d consignee's station in 1-cwt. kegs.
- SODIUM NITROPRUSSIDE.—16s. per lb.
- SODIUM POTASSIUM TARTRATE (ROCHELLE SALT).—90s. to 95s. per cwt. Crystals, 5s. per cwt. extra.
- SODIUM SALICYLATE.—Powder, 1s. 7d. to 1s. 9d. per lb. Crystal, 1s. 8d. to 1s. 10d. per lb.
- SODIUM SULPHIDE, PURE RECRYSTALLISED.—10d. to 1s. 1d. per lb.
- SODIUM SULPHITE, ANHYDROUS.—£27 10s. to £28 10s. per ton, according to quantity. Delivered U.K.
- SULPHONAL.—6s. 9d. to 7s. per lb.
- TARTAR EMETIC, B.P.—Crystal or powder, 2s. 1d. to 2s. 3d. per lb.
- THYMOL.—Puriss., 10s. to 10s. 3d. per lb., according to quantity. Firmer. Natural, 14s. 3d. per lb.

Perfumery Chemicals

- ACETOPHENONE.—7s. per lb.
- AUBEPINE (EX ANETHOL).—11s. per lb.
- AMYL ACETATE.—2s. per lb.
- AMYL BUTYRATE.—5s. 3d. per lb.
- AMYL SALICYLATE.—3s. per lb.
- ANETHOL (M.P. 21/22° C.).—5s. 6d. per lb.
- BENZYL ACETATE FROM CHLORINE-FREE BENZYL ALCOHOL.—2s. per lb.
- BENZYL ALCOHOL FREE FROM CHLORINE.—2s. per lb.
- BENZALDEHYDE FREE FROM CHLORINE.—2s. 6d. per lb.
- BENZYL BENZOATE.—2s. 6d. per lb.
- CINNAMIC ALDEHYDE NATURAL.—16s. 6d. per lb.
- COUMARIN.—10s. per lb.
- CITRONELLOL.—13s. 3d. per lb.
- CITRAL.—8s. 3d. per lb.
- ETHYL CINNAMATE.—6s. per lb.
- ETHYL PETHALATE.—3s. per lb.
- EUGENOL.—8s. 3d. per lb.
- GERANIOL (PALMAROSA).—17s. 9d. per lb.
- GERANIOL.—6s. to 10s. per lb.
- HELIOTROPINE.—4s. 9d. per lb.
- ISO EUGENOL.—13s. per lb.
- LINALOOL.—Ex Bois de Rose, 14s. per lb. Ex Shui Oil, 9s. 9d. per lb.
- LINALYL ACETATE.—Ex Bois de Rose, 17s. 6d. per lb. Ex Shui Oil, 13s. 9d. per lb.
- METHYL ANTHRANILATE.—8s. 6d. per lb.
- METHYL BENZOATE.—4s. per lb.
- MUSK KETONE.—35s. per lb.
- MUSK XYLOL.—8s. per lb.
- NEROLIN.—4s. 6d. per lb.
- PHENYL ETHYL ACETATE.—12s. per lb.
- PHENYL ETHYL ALCOHOL.—10s. 6d. per lb.
- RHODINOL.—31s. 6d. per lb.
- SAFROL.—1s. 6d. per lb.
- TERPINEOL.—1s. 8d. per lb.
- VANILLIN.—15s. 3d. to 16s. 6d. per lb.

Essential Oils

- ALMOND OIL.—Foreign S.P.A., 11s. per lb.
- ANISE OIL.—2s. 9d. per lb.
- BERGAMOT OIL.—26s. per lb.
- BOURBON GERANIUM OIL.—13s. per lb.
- CAMPOR OIL.—9d. per lb.
- CANANGA OIL, JAVA.—15s. 9d. per lb.
- CINNAMON OIL LEAF.—6d. per oz.
- CASSIA OIL, 80/85%.—7s. 3d. per lb.
- CITRONELLA OIL.—Java, 1s. 9d. per lb., c.i.f. U.K. port for shipment over 1928. Ceylon, pure, 1s. 7d. per lb.
- CLOVE OIL.—5s. per lb.
- EUCALYPTUS OIL, AUSTRALIAN.—2s. 1d. per lb.
- LAVENDER OIL.—Mont Blanc, 38/40%, Esters, 17s. per lb.
- LEMON OIL.—8s. 6d. per lb.
- LEMONGRASS OIL.—4s. 6d. per lb.
- ORANGE OIL, SWEET.—11s. 3d. per lb.
- OTTO OF ROSE OIL.—Anatolian, 35s. per oz. Bulgarian, 75s. per oz.
- PALMA ROSA OIL.—10s. 3d. per lb.
- PEPPERMINT OIL.—Wayne County, 15s. 9d. per lb.; Japanese, 8s. per lb.
- PETITGRAIN OIL.—7s. 9d. per lb.
- SANDALWOOD OIL.—Mysore, 26s. 6d. per lb.; 90/95%, 16s. 6d. per lb.

London Chemical Market

The following notes on the London Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. R. W. Greeff & Co., Ltd., and Messrs. Chas. Page & Co., Ltd., and may be accepted as representing these firms' independent and impartial opinions.

London, December 22, 1927.

OWING to the approach of the Christmas holidays, there is absolutely no change to report in the market for chemicals, which remains firm, but naturally the volume of business is restricted for the time being.

General Chemicals

ACETONE.—Unchanged at £63 per ton, with reduction for larger quantities.

ACID ACETIC is still very firm. Price unchanged at £37 to £38 per ton for 80%.

ACID CITRIC.—Unchanged.

ACID FORMIC is still in good demand. Price still firm at about £45 per ton.

ACID LACTIC.—Unchanged.

ACID OXALIC is still firm and in good demand at £30 per ton.

ALUMINA SULPHATE.—Demand remains active and price firm at £5 15s. per ton.

AMMONIUM CHLORIDE.—Unchanged.

BARIUM CHLORIDE.—Unchanged at £8 10s. to £9 per ton.

COPPER SULPHATE.—Unchanged.

FORMALDEHYDE is in fair demand, price remains unchanged, at about £41 per ton.

LEAD ACETATE.—Demand is increasing at £43 10s. for white with 10s. per ton less for brown.

LIME ACETATE.—Unchanged.

METHYL ACETONE.—The market is quiet at £54 to £55 per ton.

POTASSIUM CHLORATE is still firm and in short supply.

POTASSIUM PERMANGANATE.—Price is 5d. to 5½d. per lb.

POTASSIUM PRUSSATE.—Unchanged at £59 per ton.

SODA ACETATE still very short, price remains firm at £19 15s. per ton to £20 per ton.

SODA BICHROMATE.—Unchanged at 3½d. per lb.

SODA CHLORATE.—Continues very firm and in short supply at £26 to £28 per ton.

SODA NITRATE.—Unchanged at £19 10s. to £20 per ton. Position firm and demand good.

SODA PRUSSATE.—Firm at 4½d. per lb. to 5d. per lb., according to quantities.

SODA SULPHIDE.—Unchanged.

ZINC SULPHATE.—Unchanged.

Coal Tar Products

The market for coal tar products is quiet, owing to the coming vacation, and prices for certain products are somewhat weaker.

90's BENZOL is quoted at about 1s. 3d. to 1s. 4d. per gallon, while the motor quality is quoted at 1s. 1d. to 1s. 1½d. per gallon.

PURE BENZOL is worth about 1s. 5½d. to 1s. 6½d. per gallon on rails.

CREOSOTE OIL.—Although firm, business is scarce, and it is quoted at about 7½d. per gallon on rails in the North, while the price in London is about 8½d. per gallon.

CRESYLIC ACID is weaker, and is quoted at about 2s. 1d. per gallon for the pale quality 97/99%, while the dark 95/97% is quoted at about 1s. 10d. per gallon.

SOLVENT NAPHTHA has slightly more activity, but the price remains at about 9d. per gallon, although supplies are not so easily obtainable.

HEAVY NAPHTHA is quoted at about 10d. per gallon.

NAPHTHALENES remain steady at about £6 15s. to £7 per ton for the 74/76 quality, and at about £8 to £8.15s. per ton for the 76/78 quality, but quantities are scarce.

PITCH remains steady, and, although little business is being done, prices are well maintained at 85s. to 90s., f.o.b.

Latest Oil Prices

LONDON.—LINSEED OIL slow, with prices irregular. Spot, ex mill, £28 10s.; December, £27 7s. 6d.; January-April, £27 15s.; May-August, £28 12s. 6d. RAPE OIL steady. Crude extracted, £44; technical refined, £46, naked, ex wharf. COTTON OIL quiet. Refined common edible, £42; Egyptian crude, £37 10s.; deodorised, £44 per ton. TURPENTINE steady and unchanged to 3d. lower. American, spot, 39s. 3d.; January-April, 40s. 3d. per cwt.

HULL.—December 21.—LINSEED OIL.—Spot and December, £28 10s.; January-April, £28 12s. 6d.; May-August, £28 15s. per ton, naked. COTTON OIL.—Bombay, crude, £31 5s.; Egyptian, crude (new), £36; edible, refined, £42; deodorised, £42 per ton, naked. PALM KERNEL OIL.—Crushed, 5½ per cent., £39 10s. per ton, naked. GROUNDNUT OIL.—Crushed/extracted, £46 10s.; deodorised, £50 10s. per ton. SOYA OIL.—Extracted and crushed, £34 10s.; deodorised, £38 per ton. RAPE OIL. Crude/extracted, £43; refined, £45 per ton. TURPENTINE.—Spot, 40s. 9d. per cwt., net cash terms, ex-mill. CASTOR OIL and COD OIL unaltered.

Nitrogen Products

EXPORT.—Although only a small amount of business has been transacted, the market has remained firm at £9 11s. to £9 16s. per ton f.o.b. U.K. port in single bags. Large quantities continue to be shipped to the Far East. Most of the inquiries are for prompt shipment, although the sugar growing colonies are as usual inquiring for forward positions.

HOME.—The delivery of orders to fertiliser manufacturers and for shipment to Ireland provides outlet for present production. The demand for prompt use at this season is always small, but a number of merchants are buying in advance of spring requirements, thereby taking advantage of the producers' price scale. It is understood that a number of merchants have made forward bookings. At the moment the market is featureless, and it is not expected to liven until February.

NITRATE OF SODA.—The market has been firmer on account of a better demand in consuming countries. The price f.o.b. has risen from 17s. to 17s. 3d. per metric quintal with a possibility of further rise on account of the small quantity available for early spring shipment.

South Wales By-Products

WITH the Christmas holidays and the advent of the New Year pending, the South Wales demand for all by-products has fallen to "spot" demands to meet immediate requirements. It is unlikely that there will be any material increase until the first two weeks

of the New Year have passed. The New Year indications are that business will increase all round; conditions in all the heavy industries have improved, especially in the coal and tinplate industries, and by-product activities are usually regulated by the condition of these industries. Prices are unchanged, pitch, for which there is scarcely any call, selling at from 77s. 6d. to 82s. 6d. per ton. Solvent naphtha remains at from 10d. to 1s. 0½d. per gallon, f.o.r. maker's works, while crude naphthalene ranges from £4 10s. to £5 per ton. Tars have a moderate inquiry, crude tar selling at from 60s. to 65s. per ton; coke oven tar at 8½d. to 9d. per gallon, and gasworks tar at 7d. to 7½d. per gallon, f.o.r. maker's works, and 10d. to 1s. delivered in barrels. Patent fuel and coke are only in moderate demand, but the prospects are bright. Patent fuel prices (export) are from 22s. 6d. to 24s., while coke for export ranges from 27s. 6d. to 37s. 6d. a ton.

War Drugs Disposal Dispute: Judgment Given

ON Wednesday, in the Chancery Division, Mr. Justice Russell gave his reserved judgment in the action (reported in THE CHEMICAL AGE on December 10), by Wm. H. Parry, pharmacist, of Dudley Road, Finchley, against S. H. Travis and Co., wholesale chemists, of St. Pancras, for a declaration that a partnership or joint adventure was entered into between them for acquisition and disposal of certain chemicals and medical drugs, etc. The defendants disputed the claim.

The dispute arose out of the purchase and re-sale of war supplies in March, 1926. Plaintiff was employed during the war in the medical supply department, and after the war, in connection with the disposal of surplus stocks, and he set up an agreement between him and Mr. Sidney Travis, on behalf of the defendant firm, that the firm should provide the capital for the purchase of the goods and that plaintiff was to supervise their sale, and the profits of the enterprise should be divided between them in the proportion of 75 per cent. for the defendants and 25 per cent. for the plaintiff.

Defendant denied any partnership or adventure and said the goods were bought for himself and another. Defendant was to get 25 per cent. of the net profits that were made by the defendant firm.

His lordship held that the plaintiff had made out his case, and he gave judgment for the plaintiff and ordered an inquiry as to what damages plaintiff had suffered. Plaintiff to have the costs of the action.

Scottish Chemical Market

The following notes on the Scottish Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. Charles Tennant and Co., Ltd., Glasgow, and may be accepted as representing the firm's independent and impartial opinions.

Glasgow, December 21, 1927.

BUSINESS in the heavy chemical market has been rather quieter during the past week possibly on account of the near approach of the holidays. There are no changes in prices to record for delivery this year, but manufacturers of the alkali products have announced reductions in several for next year.

Industrial Chemicals

ACETONE, B.G.S.—Quoted £59 to £62 per ton, ex store, according to quantity.

ACID ACETIC.—98/100% glacial, £56 to £67 per ton, according to quality and packing, c.i.f. U.K. ports; 80% pure, £37 10s. per ton, ex wharf; 80%, technical, £37 10s. per ton, ex wharf.

ACID BORIC.—Crystals, granulated or small flakes, £30 per ton; powdered, £32 per ton, packed in bags, carriage paid U.K. stations.

ACID CARBOLIC, ICE CRYSTALS.—Quoted price unchanged at 7½d. per lb., f.o.b. U.K. ports, but in very little demand.

ACID CITRIC, B.P. CRYSTALS.—Quoted 1s. 6½d. per lb., less 5%, ex wharf.

ACID HYDROCHLORIC.—Usual steady demand. Arsenical quality, 4s. 9d. per carboy. Dearsenicated quality, 6s. 3d. per carboy, ex works.

ACID NITRIC, 80%.—Quoted £23 5s. per ton, ex station, full truck loads.

ACID OXALIC, 98/100%.—On offer from the Continent at 3½d. per lb., ex wharf. Spot material quoted 3½d. per lb., ex store. In better demand.

ACID SULPHURIC.—144°.—£3 12s. 6d. per ton; 160°, £7 per ton, ex works, full truck loads. Dearsenicated quality, 20s. per ton more.

ACID TARTARIC, B.P. CRYSTALS.—Still in little demand, but price unchanged at 1s. 2½d. per lb., less 5%, ex wharf.

ALUMINA SULPHATE, 17/18%, IRON FREE.—Spot material quoted £5 12s. 6d. per ton, ex store. On offer for early delivery at £5 5s. per ton, c.i.f. U.K. ports.

ALUM.—Lump Potash quality quoted £8 5s. per ton, c.i.f. U.K. Ports. Crystal meal 10s. per ton less. Lump quality on spot offered at £9 per ton, ex store.

AMMONIA, ANHYDROUS.—Unchanged at about 9d. per lb., carriage paid. Containers extra and returnable.

AMMONIA CARBONATE.—Lump, £37 per ton. Powdered £39 per ton, packed in 5 cwt. casks, delivered or f.o.b. U.K. ports.

AMMONIA, LIQUID, 88°.—Unchanged at about 2½d. to 3d. per lb., delivered according to quantity.

AMMONIA MURIATE.—Grey galvanisers crystals of British manufacture unchanged at £23 to £24 per ton, ex station. Continental on offer at £19 15s. per ton, c.i.f. U.K. ports. Fine white crystals quoted £17 10s. per ton, c.i.f. U.K. ports.

ARSENIC, WHITE POWDERED.—Unchanged at about £19 17s. 6d. per ton, ex wharf, prompt despatch from mines. Spot material on offer at £20 15s. per ton, ex store.

BARIUM CARBONATE, 98/100%.—English material on offer at £7 5s. per ton, ex store. Continental quoted £7 per ton, c.i.f. U.K. ports.

BARIUM CHLORIDE, 98/100%.—Large white crystals quoted £6 17s. 6d. per ton, c.i.f. U.K. ports.

BLEACHING POWDER.—Manufacturers advise a reduction in price of £1 per ton from January 1 next, on short dated contracts, with a further concession of 7s. 6d. per ton for a 3 years' contract. Continental now offered at about £6 10s. per ton, ex wharf.

BORAX.—English manufacturers' prices unchanged as follows: Granulated £19 10s. per ton; crystals, £20 per ton; powdered, £21 per ton. Odd parcels of granulated on offer from America at about £16 per ton, ex wharf.

CALCIUM CHLORIDE.—English manufacturers' price unchanged at £5 to £5 5s. per ton, ex station, with a slight reduction for contracts. Continental now on offer at £3 10s. per ton, c.i.f. U.K. ports.

COPPERAS, GREEN.—Unchanged at about £3 10s. per ton, f.o.b. works or £4 12s. 6d. per ton, f.o.b. U.K. ports for export.

COPPER SULPHATE.—Continental material quoted £23 per ton, c.i.f. U.K. ports. British on offer at £24 per ton, ex store.

FORMALDEHYDE, 40%.—On offer at £37 5s. per ton, c.i.f. U.K. ports. Spot material quoted £39 per ton, ex store.

GLAUBER SALTS.—English material unchanged at £4 per ton, ex store or station. Continental quoted £2 15s. per ton, c.i.f. U.K. ports.

LEAD, RED.—Imported material now available at about £30 15s. per ton, ex store.

LEAD, WHITE.—Quoted £31 per ton, ex store.

LEAD ACETATE.—White crystals quoted £39 15s. per ton, c.i.f. U.K. port. Brown about £38 10s. per ton, c.i.f. U.K. ports. Spot material on offer at £42 15s. per ton, ex store, spot delivery.

MAGNESITE, GROUND CALCINED.—Quoted £8 10s. per ton, ex store, in moderate demand.

POTASH, CAUSTIC, 88/92%.—Solid quality quoted £28 15s. per ton, c.i.f. U.K. ports, minimum 15-ton lots. Under 15-ton lots, £29 10s. per ton. Liquid, £15 per ton, minimum 15-ton lots. Under 15-ton lots, £15 7s. 6d. per ton, c.i.f. U.K. ports.

POTASSIUM BICHROMATE.—Unchanged at 4½d. per lb. delivered. Price from January 1, 4½d. per lb., delivered.

POTASSIUM CARBONATE, 96/98%.—Rather scarce for immediate delivery. Quoted £25 10s. per ton, ex wharf. Spot material about £26 10s. per ton, ex store.

POTASSIUM CHLORATE, 99/100%.—Continental prices dearer, now quoted £25 15s. per ton, c.i.f. U.K. ports for powdered quality. Crystals, 30s. per ton extra.

POTASSIUM NITRATE.—Continental quotations rather easier, now on offer at about £19 15s. per ton, c.i.f. U.K. ports. Spot material available at £20 15s. per ton, ex store.

POTASSIUM PERMANGANATE, B.P. CRYSTALS.—Quoted 6½d. per lb., ex store, spot delivery.

POTASSIUM PRUSSIAN (YELLOW).—Unchanged at about 6½d. per lb., ex store, spot delivery. Offered from the Continent at 6½d. per lb., ex wharf.

SODA CAUSTIC, POWDERED, 98/99%.—£19 7s. 6d. per ton; 76/77%, £15 10s. per ton; 70/72%, £14 10s. per ton, carriage paid station, minimum 4-ton lots on contract. Spot material, 10s. per ton extra. Manufacturers now advise a reduction on the basis of £1 per ton, for the higher strength offered next year.

SODIUM ACETATE.—In good demand and in limited supply. Imported material now quoted £19 15s. per ton, ex store.

SODIUM BICARBONATE.—Refined recrystallised, £10 10s. per ton, ex quay or station. N.W. quality, 30s. per ton less. No change in price for next year.

SODIUM BICHROMATE.—Price for delivery this year, 3½d. per lb., delivered buyers' works. From January 1, 3d. per lb., delivered buyers' works, minimum 2-ton lots. Smaller quantities, 3½d. per lb. extra.

SODIUM CARBONATE (SODA CRYSTALS).—£5 to £5 5s. per ton, ex quay or station; powdered or pea quality, 27s. 6d. per ton, extra. Alkali, 58%, £8 10s. per ton, ex quay or station.

SODIUM HYPOSULPHITE.—Large crystals of English manufacture quoted £9 10s. per ton, ex store, minimum 4-ton lots. Continental on offer at about £8 2s. 6d. per ton, ex wharf, prompt shipment. Pea crystals of British manufacture quoted £15 5s. per ton, ex station, 4-ton lots.

SODIUM NITRITE, 100%.—Quoted £19 10s. per ton, ex store.

SODIUM PRUSSIAN (YELLOW).—In moderate demand and price unchanged at about 4½d. per lb., ex store. Offered for prompt shipment from the Continent at 4½d. per lb., ex wharf.

SODIUM SULPHATE (SALTCAKE).—Price for home consumption, £3 7s. 6d. per ton, ex works.

SODIUM SULPHIDE.—Manufacturers' advise an appreciable reduction in price for next year. Present prices for English material are as follows: 60/62%, solid, £10 10s. per ton; broken, £11 10s. per ton; flakes, £13 5s. per ton; crystals, 31/34%, £7 10s. per ton to £8 5s. per ton, according to quality, delivered your works, minimum 4-ton lots on contract. Prices for spot delivery 5s. per ton higher for solid, 2s. 6d. per ton for crystals. Offered from the Continent at about £9 5s. per ton, c.i.f. U.K. ports. Broken, 15s. per ton extra.

SULPHUR.—Flowers, £12 per ton; roll, £10 15s. per ton; rock, £10 12s. 6d. per ton; floristella, £9 10s. per ton; ground American, £9 5s. per ton, ex store. Prices nominal.

ZINC CHLORIDE.—British material 98/100%, quoted £24 15s. per ton, f.o.b. U.K. ports; 98/100% solid on offer from the Continent at about £21 15s. per ton, c.i.f. U.K. ports. Powdered, 20s. per ton extra.

ZINC SULPHATE.—Continental material quoted £11 15s. per ton, ex wharf.

NOTE.—The above prices are for bulk business and are not to be taken as applicable to small parcels.

THE MIIKE DYEWERKS and the Mitsui Bussan Kaisha, of Japan, are to undertake the manufacture of salicylic acid on a large scale in order to supply all domestic requirements. Hitherto, nearly half the salicylic acid used in Japan has been imported. The Sankyo Co. has hitherto been the chief producer in Japan, but with the completion of its new plant, the Miike works will be able to produce over 300,000 lb. annually.

Manchester Chemical Market

(FROM OUR OWN CORRESPONDENT.)

Manchester, December 22, 1927.

BUSINESS in chemicals on the Manchester market during the past week has been relatively quiet, on a steadily diminishing scale, and is expected to remain so until after the turn of the year, though it will probably be well into the second week in January before interest in the market is back to something like normal. Prompt business since last report has naturally been on a limited scale; but contract orders are developing steadily, particularly in those lines in which makers have announced substantial reductions for 1928 contract deliveries.

Heavy Chemicals

Until the end of the current year caustic soda is still quoted at from £14 10s. to £16 10s. per ton, according to quality, though forward business is being booked on the basis of a maximum reduction of £1 a ton compared with existing prices. Phosphate of soda continues in moderate request, but values of this material keep fairly steady at up to £12 15s. per ton. Interest in sulphide of sodium is slow, and the tendency is weak, although at round £9 15s. per ton for the 60-65 per cent. concentrated solid and £8 7s. 6d. for the commercial product offers show little actual change since last week. Chlorate of soda is attracting a fair amount of attention, and prices are steady at from 2½d. to 3d. per lb. Prussiate of soda, also, is well held at 4½d. per lb., but only a quiet business has been done during the last few days. Saltcake has met with a moderate amount of inquiry on forward account at the lower figure of £2 12s. 6d. per ton. Glauber salts are easy, and have been in poor demand. Alkali continues to be quoted at £6 15s. per ton up to the end of the year, but for contract deliveries over next year substantially lower prices are being indicated. Hyposulphite of soda keeps quiet, but steady, at £9 10s. per ton for the commercial quality and £16 to £16 5s. for the photographic. Nitrate of soda is fully maintained at up to £19 5s. per ton. Makers' prices for bichromate of soda for next year range from 3d. to 3½d. per lb., according to quantities.

Yellow prussiate of potash shows little change on the week, demand being quiet at from 6½d. to 6¾d. per lb. Carbonate of potash has met with a moderate amount of inquiry at about £26 10s. per ton. In the case of caustic potash, values are well held at about £30 per ton. Permanganate of potash has been in limited request, and values are easy at 5¾d. per lb. for the B.P. material, and about 4¾d. per lb. for the commercial quality. Forward business in bichromate of potash has been fairly active at about 4½d. per lb. Offers of chlorate of potash are in the neighbourhood of 3d. per lb.

There has been a quietly steady demand in the case of sulphate of copper, and prices are steadier at from £24 5s. to £24 10s. per ton, f.o.b. Arsenic has not attracted much attention during the past week, but values are pretty much where they were, these varying from £18 to £18 5s. per ton at the mines for white powdered, Cornish makes. The acetates of lead are quiet at from £40 to £41 per ton for white, and round £39 for brown. Nitrate of lead is about unchanged on the week at £37 10s. per ton. Offers of the acetates of lime are still rather scarce, and values are firm in consequence, grey quality being quoted at from £16 to £16 10s. per ton, and brown at £10 10s.

Acids and Tar Products

Tartaric acid has been in rather poor request at about 1s. 2½d. per lb. Citric acid has moved off in small quantities, but prices are firm at up to 1s. 7d. per lb. Oxalic acid varies from 3½d. to 3¾d. per lb., according to quantity, and the demand has been slow. Acetic acid is well held at round £66 per ton for glacial and £37 for the 80 per cent. commercial product.

Pitch is fairly steady at £4 2s. 6d. per ton, f.o.b., but the demand for this continues rather slow. Creosote oil, however, remains in active request for shipment and prices are firm at up to 8½d. per gallon. More interest has also been taken in carbolic acid, and crude is dearer at about 2s. 6d. per gallon for 60's, with crystals quoted at 7½d. to 7¾d. per lb. Solvent naphtha is dull, but about unchanged in price at 11d. per gallon.

I.C.I. Developments

Sanction Asked for Issue of Preference Capital

IMPERIAL Chemical Industries, Ltd., is seeking sanction for raising the amount of preference shares in issue. In a circular letter the board give notice of a meeting of the preference shareholders convened for Thursday, December 29, for the purpose of obtaining their consent to a resolution giving the directors power to increase the preference capital, as may be deemed expedient from time to time, from £16,220,000 to £22,800,000 by the issue, out of the existing authorised capital, of 6,580,000 shares.

Acquisition of Other Undertakings

It is explained that the board have under consideration the acquisition of undertakings which call either for an exchange of shares or a cash consideration.

When the fusion of interests took place between Brunner, Mond and Co., Nobel Industries, the United Alkali Co., and the British Dyestuffs Corporation, the authorised capital of Imperial Chemical Industries, Ltd., was fixed at £65,000,000. The formal terms of share exchange were issued mid-December, 1926, and by February last over 96 per cent. of the respective capitals of the constituent companies had been exchanged. Opportunity was afforded for belated exchanges to be made, with the result that as at mid-October last the Imperial chemical capital was composed of:—

Cum. Pref. £1 shares, 7 per cent.	£16,067,977
Ordinaries of £1	31,758,529
Deferred in 10s. shares	9,531,826
			£57,358,332

The proposed increase of £6,580,000 will raise the 7 per cent. cum. preferences in issue to £22,800,000 in round figures, allowing a small margin between the total mentioned above and the sum named in the circular.

City Views

Rumours in financial circles indicate that it is possible that the company's plans involve some re-arrangement of the disposition of the capital, a share exchange reducing the number of deferred and increasing the preference, for light upon which, and the acquisition of other undertakings, it is necessary to await the chairman's statement. At the same time rumour has connected the name of the Mond Nickel Co. with pending developments, but this is unconfirmed.

It may, perhaps, be a coincidence, but it is a fact that strong buying of Mond Nickel ordinaries has been in evidence in the market of late, and the present quotation is nearly £7. Good reports are to hand from the company's Canadian properties, and the recent sharp upward movement in the shares, not long ago ruling around £3, has been not unassociated with developments. On the other hand, City gossip is to the effect that the Nobel Industries branch of Imperial Chemicals in one of its sections is a large consumer of nickel (ammunition, for instance) and a closer working agreement, if not an actual absorption, is spoken of as a probability. There are in existence £900,000 of Mond Nickel ordinaries of £1 each upon which recent dividends have been at the rate of 12½ per cent. per annum.

Co-operation in Industry; Employers and Trade Unions

THE General Council of the Trades Union Congress decided, on Tuesday afternoon, to accept the invitation of a representative group of employers to join with them in discussions on the problems of British industry, a movement which was started by Sir Alfred Mond. Proposals for holding a meeting of employers with trades union leaders were contained in a letter addressed to Mr. W. H. Citrine, secretary of the General Council, signed by 24 employers of labour on a large scale and representing over 160 companies. The chemical signatories to the letter were Sir Alfred Mond; Sir Frederick Mills, a director of the Chemical and Metallurgical Corporation; Sir Arthur Dorman, managing director of Dorman, Long and Co., Ltd.; Sir Robert Hadfield; Mr. M. Mannaberg, a director of Bolckow, Vaughan and Co.; Sir David Milne Watson, governor of the Gas, Light and Coke Co.; Sir Josiah Stamp; Lord Weir; Lord Ashfield; and Mr. Samuel Courtauld.

Company News

REEVES AND SONS.—An interim dividend of 2½ per cent., less tax, is announced on the ordinary shares, payable on January 20.

TARSLAG (1923).—The board has declared a dividend of 8 per cent. per annum on the 8 per cent. cumulative preference shares for the six months ended June 30, 1927.

YORKSHIRE DYEWARE AND CHEMICAL CO.—An interim dividend has been declared at the rate of 5 per cent. per annum, less tax, for the half year, payable on January 2.

BRITISH OIL AND CAKE MILLS.—The company announces the payment of an interim dividend of 5 per cent. (less tax) on the ordinary share capital of the company. Last year there was no dividend on the ordinaries, which for 1925 received 2½ per cent. The preferred ordinary shareholders received an interim dividend of 5 per cent. (less tax) in October last.

IDRIS HYDRAULIC TIN.—The directors have declared an interim dividend of 2s. per share (less income tax at 4s. in £) respect of profits for year ending December 31, 1927, payable on January 31 next to all shareholders on register on January 11. This will apply to all transfers lodged on or before January 7. (Three similar interims have already been paid on account of current year.) Proposals will be submitted to shareholders early in January for subdivision of each of company's £1 shares into four shares of 5s. each.

JOSEPH NATHAN AND CO.—The directors report that cabled and preliminary information indicate that the company's accounts for the year ended September 30, 1927, will show a net profit, subject to audit, of £55,045. The report and accounts will be issued in March, when the annual general meeting will be held. The usual half-yearly dividend on the 7 per cent. preference shares has been declared, payable January 1, 1928, and shareholders will be asked at the annual general meeting to confirm the declaration and immediate payment of a dividend for the year on the 8 per cent. cumulative preferred ordinary shares. It will be recalled that last year the company's capital was reorganised.

Tariff Changes

BRITISH INDIA.—The *Indian Trade Journal*, of November 17 publishes a notification which prohibits the manufacture, possession and importation of any explosive containing or consisting of sulphur mixed with potassium chlorate or any other chlorate. The prohibition does not extend to such explosives used in small quantities for scientific purposes or for the manufacture of safety matches.

PORTUGAL.—Details of provisions for certain reductions in Portuguese Consular fees on various articles and materials, including certain chemicals, are contained in the *Board of Trade Journal* for December 15, 1927.

Film Factory Fire Prosecution

A SERIES of summonses under the Factory and Workshops Acts, arising out of the fatal fire at the film factory in Redhill Street, Regent's Park, on September 9, were heard by Mr. H. C. A. Bingley at the Marylebone Police Court on Wednesday. The Film Waste Products, Ltd., of Union Wharf, Redhill Street, were summoned, at the instance of the Home Office, for:—1. Failing within a month of occupying the factory in July, 1927, to serve on the factory inspector of the district a written notice containing the particulars prescribed by the Acts; 2. Neglecting to keep the means of escape from fire from all parts of the drying and reeling room free from obstruction during working hours; 3. Neglecting to remove finished celluloid articles from the workroom to a "suitable place" without undue delay. A fourth summons alleged that, in consequence of the means of escape from the drying and reeling room not being kept free from obstruction, two young women, Ada Eliza Baker and May Cornwell, died. The company having pleaded guilty to the first three summonses, the fourth was withdrawn. Mr. Bingley fined the company £5, £10, and £10 on the first three summonses—a total of £25—and granted £25 costs.

Chemical Trade Inquiries

The following inquiries, abstracted from the "*Board of Trade Journal*," have been received at the Department of Overseas Trade (Development and Intelligence), 35, Old Queen Street, London, S.W.1. British firms may obtain the names and addresses of the inquirers by applying to the Department (quoting the reference number and country), except where otherwise stated.

BLEACHING AND DYEING PLANT, ETC.—A European firm of textile machinery importers' and manufacturers' agents established in Bombay desire to represent British manufacturers. (Repetition of Reference No. 368.) (Reference No. 502.)

MEDICINAL CHEMICALS.—The Director-General, India Store Department, Branch No. 11, Belvedere Road, Lambeth, London, S.E.1, invites tenders for 1,330 lb. bismuthi carbonas B.P., 580 lb. bismuthi salicylas B.P., and 4,420 lb. bismuthi subnitras B.P.; 1,040 lb. iodoformum B.P. and 1,625 lb. iodum B.P. (samples required with tender); 31,900 lb. glycerinum B.P. (sample required with tender). Tenders due January 13, 1928. Forms of tender obtainable from the above at a fee of 5s. per set, which is not returnable.

BRANDED COAL TAR DISINFECTANT.—A company in Winnipeg manufacturing chemical cleaners and jobbing a general line of hotel and institution supplies, desire to represent a British maker of a branded coal tar disinfectant; they sell throughout the Prairie Provinces and are willing to carry a consignment stock in bulk and to bottle it locally. (Reference No. 504.)

ALUM.—The Ministry of the Interior, Cairo, is calling for tenders to be presented by February 1, 1928, for the supply of 410 tons of alum. (Reference B.X. 4,092.)

Large Potassium Nitrate Deposits in Australia

THE discovery of a large area of nitrate, 120 miles east of Alice Springs, the administrative centre of the new territory of Central Australia, has (states *Nature*) been confirmed by Sir Douglas Mawson, who has visited the locality. The existence of the nitrate was indicated by the report of an aboriginal that the earth ignited when thrown on the fire. Sir Douglas Mawson identifies it as potassium nitrate, and its value is estimated as from £60 to £90 a ton. Potassium nitrate occurs naturally in Bengal, where it is formed by the decomposition of excreta in the presence of nitrifying bacteria. Potassium chlorides occur in basins and in arid areas by the evaporation of waters which drain from rocks rich in potash. The new Australian deposit may have been formed in a basin by the decomposition of the animal remains in swamps. This discovery justifies the recent decision to extend the railway from Oodnadatta, the present northern terminus of the South Australian railways, to Alice Springs, and will probably lead to the completion of the long-projected and promised railway from South Australia across the centre of the continent to the Northern Territory.

"Plassmann" Process of Low-Temperature Carbonisation

PRESIDING at the annual meeting of the Leeds Fireclay Co., Ltd., on Thursday, December 15, Mr. C. F. Spender said that they had taken over a number of shares of the Farnley Iron Co., which gave them control of the company's fireclay works. Referring to the company's acquisition of the exclusive British rights of the Plassmann process of low-temperature carbonisation of coal, he stressed the importance of such treatment, but pointed out that the difficulty had been to show a commercial profit. Early in 1926, the attention of the directors had been drawn to the successful results obtained by a German firm. It was a continuous and automatic process which produced smokeless fuel in large, firm lumps from coal slacks or fires; and the tar or crude oil produced was of remarkable purity and free from coal dust in suspension. It was a freely-flowing, brown liquid which could be used for fuel oil, boiler firing, or Diesel engines. Labour and operating costs appeared to have been reduced to a minimum. The company were installing a small plant capable of dealing with 2½ tons of coal, with a view of testing the suitability of the different kinds of coal for the process, and they hoped this small plant would be completed in January.

HOWARDS' DIACETONE ALCOHOL

An excellent Solvent for
ACETYCELLULOSE and NITROCELLULOSE, also for GUMS
and RESINS, e.g., Colophony, Ester Gum, Manilla, Kauri, etc., and
for Bakelite B and Shellac.

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HOWARDS' DIACETONE ALCOHOL contains NO ACETONE,
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HOWARDS' CYCLOHEXANOL SOLVENTS

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TEXTILE-SCOURING, DRY-CLEANING
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LACQUER SOLVENTS

for

PAINTS, VARNISHES, ENAMELS, POLISHES,

etc., etc.

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NOTE.—Samples and prices, together with further detailed information as to the
application of these Solvents, will be supplied on request to the Sole British Makers:
HOWARDS & SONS, LTD. (Established 1797), **ILFORD, near LONDON**

Commercial Intelligence

The following are taken from printed reports, but we cannot be responsible for any errors that may occur.

County Court Judgments

[NOTE.—The publication of extracts from the "Registry of County Court Judgments" does not imply inability to pay on the part of the persons named. Many of the judgments may have been settled between the parties or paid. Registered judgments are not necessarily for debts. They may be for damages or otherwise, and the result of bona-fide contested actions. But the Registry makes no distinction of the cases. Judgments are not returned to the Registry if satisfied in the Court books within twenty-one days. When a debtor has made arrangements with his creditors we do not report subsequent County Court judgments against him.]

PARAMOUNT FORM CO., LTD., Paramount Mills, City Road, Beeston, dyers' manufacturers. (C.C., 24/12/26.) £15 7s. 11d. October 31, and £46 3s. 11d. November 4.

Mortgages and Charges

[NOTE.—The Companies Consolidation Act of 1908 provides that every Mortgage or Charge, as described therein, shall be registered within 21 days after its creation, otherwise it shall be void against the liquidator and any creditor. The Act also provides that every Company shall, in making its Annual Summary, specify the total amount of debts due from the Company in respect of all Mortgages or Charges. The following Mortgages and Charges have been so registered. In each case the total debt, as specified in the last available Annual Summary, is also given—marked with an *—followed by the date of the Summary, but such total may have been reduced.]

BROWN (G. W.), LTD., Hanley, chemists. (M., 24/12/27.) Registered December 8, £650 mortgage, to Building Society; charged on 76, Waterloo Road, Burslem. *£1,170 8s. 10d. September 6, 1927.

GILMONT PRODUCTS, LTD., London, E.C., manufacturers of dental cream, etc. (M., 24/12/27.) Registered December 8, £3,500 debentures part of £25,000; general charge.

MILLBAY LAUNDRY CLEANING AND DYEING CO., LTD., Plymouth. (M., 24/12/27.) Registered December 6, £800 mortgage, to J. S. G. Best, Kilminorth, Duloe, farmer; charged on premises in Windsor Place, Liskeard. *£12,270. April 7, 1927.

Satisfactions

KENT CHEMICAL CO., LTD., London, E.C. (M.S., 24/12/27.) Satisfaction registered December 13, £1,350, registered April 7, 1919.

MEADOWCROFT (W.) AND SON, LTD., Blackburn, makers of fruit essences, etc. (M.S., 24/12/27.) Satisfactions registered December 12, £6,900, part of amount registered March 8, 1921; £2,300, part of amounts registered May 3, 1921; and £800, part of amount registered June 3, 1921.

London Gazette, &c.

Winding Up Petition

SENIOR CROZIER AND CO., LTD. (W.U.P., 24/12/27.) A creditors' petition for winding-up has been presented and is to be heard at the High Court of Justice on January 16.

Company Winding Up Voluntarily

DODDRELL (RICHARD F.), LTD. (C.W.U.V., 24/12/27.) At an extraordinary General Meeting of the shareholders of Richard F. Doddrell, Ltd., duly convened, and held within the offices of Messrs. Wright, Johnston and Mackenzie, Writers, 150, St. Vincent Street, Glasgow, on Monday, December 12, 1927, (Richard F. Doddrell, chairman), the following extraordinary resolution was passed:—"That it has been proved to the satisfaction of this meeting that the company cannot, by reason of its liabilities, continue its business, and that it is advisable to wind up same, and that the company be wound up voluntarily, and that William Arthur Aiton, Chartered Accountant, 37, Renfield Street, Glasgow, C.2, be and is hereby appointed liquidator for the purpose of such winding up." Notice is given, in terms of Section 188 of the Companies (Consolidation) Act, 1908, that a meeting of the creditors will be held within the Chambers of Messrs. MacLean, Gardner and Aiton, C.A., 37, Renfield Street, Glasgow, C.2, on Wednesday December 28, 1927, at 12 o'clock noon. All persons claiming to be creditors are requested to lodge claims, duly vouched, on or before that

date with the liquidator, W. A. Aiton, 37, Renfield Street, Glasgow, December 12, 1927.

MIDLAND LABORATORY GUILD, LTD. (C.W.U.V., 24/12/27.) By special resolution, November 28, confirmed December 14, H. H. Sherwood, 115, Colmore Row, Birmingham, appointed as liquidator. Meeting of creditors at 115, Colmore Row, Birmingham, on Monday, January 2, 1928, at 3 p.m. All creditors have been, or will be, paid in full.

Notice of Intended Dividend

BLAKELOCK, William Lisle, wholesale druggist, 16, Finkle Street, Stockton-on-Tees. Last day for receiving proofs, January 10. Trustee, C. L. Townsend, 80, High Street, Stockton-on-Tees.

Receiverships

DYMOND TAR CHEMICALS AND FUELS, LTD. (R., 24/12/27.) W. D. Burlinson, Incorporated Accountant, of Batley, Yorks, was appointed receiver on December 12, 1927, under powers contained in debenture dated December 2, 1921.

PHILLI-MIRANO (1926), LTD. (R., 24/12/27.) W. Foulshaw Baker, Accountant, of 93, Mortimer Street, W.1, was appointed receiver and manager on December 1, under powers contained in instruments dated January 4, 1927.

New Companies Registered

MENDIP OXIDE AND OCHRE CO., LTD. Private Co. Registered December 19. Capital, £2,000 in £1 shares. Objects: To carry on the business of miners of crude earths, clays, ores and minerals; to select, clean, work, grind and deal with the same, to act as chemists, testers, analysts, and mixers, etc. Subscribers: T. A. Tyrrell, 42, Loftus Street, Cardiff; J. F. Glumm, 30, Romilly Road, Cardiff.

NATIONAL ADHESIVES, LTD. Private Co. Registered December 19. Capital, £1,025 in 1,000 7 per cent. cumulative preference shares of £1 each and 500 ordinary shares of 1s. each. To carry on the business of manufacturers, importers and exporters of and dealers in gums, glues, gelatines, sizings, starches, dextrines, and other adhesives, etc. Directors: A. Ellis and S. Risbey, both of Charterhouse Chambers, Charterhouse Square, E.C.

L. H. PROCESS, LTD. Private Co. Registered December 19. Capital, £1,000 in £1 shares. Objects: To acquire from L. M. Hirschberg the benefit of certain existing inventions relating to the recovery of oil and spirits from coal, shale and other bituminous materials, etc. Subscribers: E. N. Snowden, 21, New Cavendish Street, W.1; H. C. Bexfield, 28-30, Paternoster Row, E.C.4.

Artificial Fertilisers in Japan

JAPANESE enterprises for the extraction of nitrogen from the air for the purpose of manufacturing fertilisers are said to be making good progress. According to the Government plan for control of these fertilisers, official agencies are to fix the maximum price and buy or import fertilisers when such action is deemed necessary. The Japan Nitrogen Fertilisers Co. is erecting an immense plant in North Korea. The Japan Artificial Co. is to complete its Toyama factory next.

Benn Brothers' Other Journals

THE CABINET MAKER.—Changing Business Methods; Decoration of Period Furniture; Some Pitfalls in Fire Insurance; New Books.

THE ELECTRICIAN.—The Electricity Commissioners' Report; "Stage Lighting for Amateur Theatricals," by G. E. Moore; "Pulverised Fuel for Power Stations," by G. H. Lake, A.M.I.E.E.

THE FRUIT GROWER.—An English Nursery in 2001," by Harry Nunn; Direct Shipping of Florida Oranges; Nature's Teeth Preserver—The Apple.

GARDENING ILLUSTRATED.—Gold Medal Roses; The Mistletoe Mystery; The Cypripedium Show; Chrysanthemums for next year.

THE GAS WORLD.—"Manufacture of Pure Liquid Ammonia in Gasworks," by J. W. Boyle; "Gas in the Fish and Chip Trade," by J. M. Loughland.

THE HARDWARE TRADE JOURNAL.—Christmas Issue: Christmas Reflections; Tales Round the Hearth; Women in Industry; Investigations into Working Conditions.

THE TIMBER TRADES JOURNAL.—The Swedish Market; Forest Resources for North West Europe; Board of Trade Returns; The Mill Web.

